

The December TECHNOLOGY REVIEW



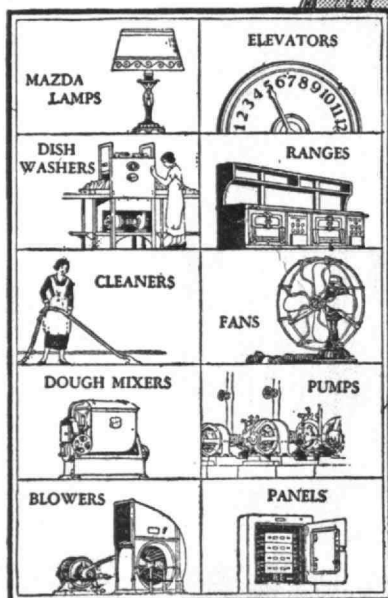
John Taylor Arms

RELATING TO THE MASSACHUSETTS
INSTITUTE OF TECHNOLOGY

technology review

Published by MIT

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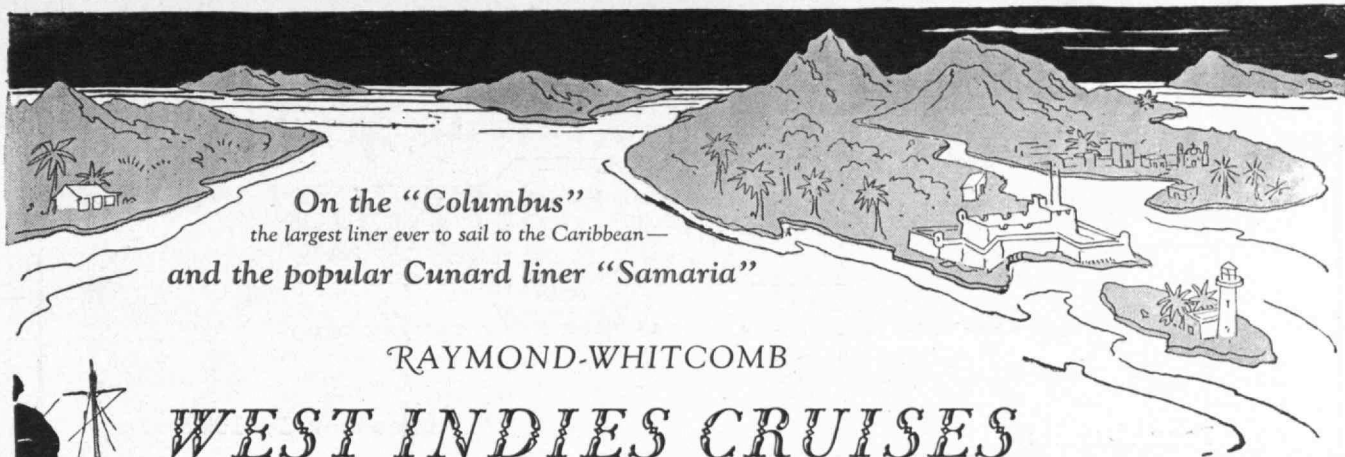
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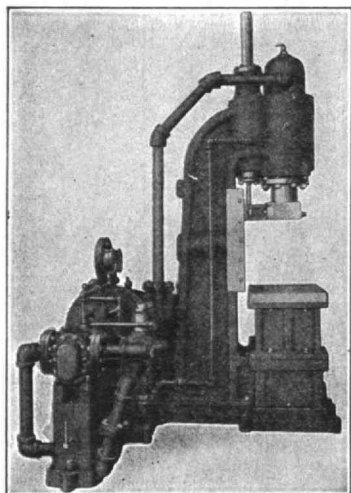
Dear Alumni:

December 1, 1927

Well, we missed connections with the first issue of the Review for my regular letter on High Pressure Hydraulics. The reason is -- a new and important development which is just now ready to announce, and which will furnish very interesting subject-matter for these letters for the balance of the Technology Year.

The general trend of this new work of ours is in speeding up the traditionally slow-moving hydraulic press, with consequent opening of new fields of application. For instance, sheet-metal working operations of many kinds, which have heretofore been performed with mechanical presses exclusively, now can be done to advantage with our new-type hydraulic presses. These new presses are identified as the "H-P-M HI-SPEED" Line.

The first of these "HI-SPEED" Presses is illustrated with this letter. It is the open-throat type particularly fitted for heavy sheet-metal work such as blanking, stamping, drawing, horning, etc. Its operating characteristics are amazing to the experienced sheet-metal stamper. For instance:



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I could fill several more pages in listing all of the possibilities of this new H-P-M Development. To give you the whole story, I have prepared a special bulletin. Ask for Number 4002 when you write.

Yours for Tech.

Howard F. MacMillin
II-21.

Howard F. MacMillin,
Vice-Pres. in charge of Sales,
The Hydraulic Press Mfg. Co.

The TECHNOLOGY REVIEW

Relating to the Massachusetts Institute of Technology

VOLUME XXX

NUMBER 2

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H. E. LOBDELL, '17 Editor
J. R. KILLIAN, JR., '26 Managing Editor
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BOOK SERVICE

TO

REVIEW READERS

Attention is called to the department, "Books" on page 128. It is the auxiliary function of this department to order books for members of the Alumni Association. Any books desired may be obtained at regular sellers' rates by forwarding an order to the Editorial Office, The Technology Review, Room 3-205, Massachusetts Institute of Technology, Cambridge, Mass.

SIMPLEX CABLES

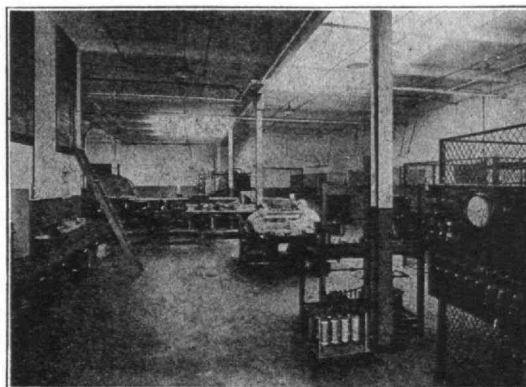


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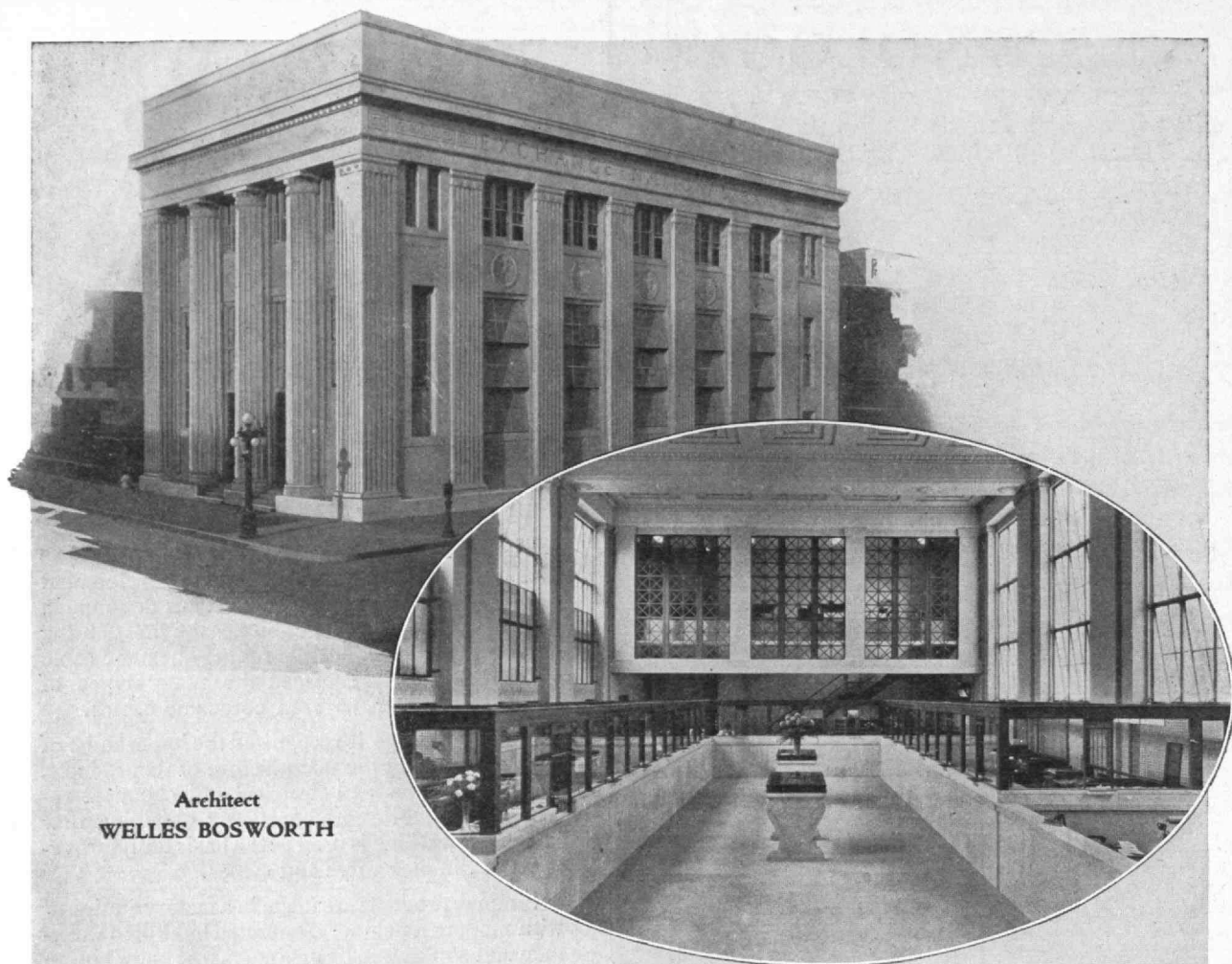
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The TECHNOLOGY REVIEW

VOLUME 30

DECEMBER, 1927

NUMBER 2

The Trend of Affairs

DURING the fiscal year ending June 30, 1927, the Institute's endowment funds increased at the rate of \$116,769.46 per month according to the Report of the Treasurer, Everett Morss, '85, made to the Corporation on October 19. They now total \$29,403,831.73, or 5 per cent more than on June 30, 1926. It is likewise encouraging to note that "the market value of these securities as of June 30, 1927, is approximately \$3,000,000 in excess of the book value. This explains in part the high average yield for the year of 5.5 per cent."

Gross expense for 1926-27 exceeded gross income by \$74,500 but net income exceeded net expense by \$22,300. The total number of students decreased from the 1925-26 figure and income from students decreased by \$60,300, but net operating income exceeded the two million mark for the second time in the Institute's history, last year being the first time that figure was reached.

Academic expenses increased \$45,600 or 3.4 per cent over 1925-26. They were \$1,374,663.95, nearly a half-million dollars more than the income from tuition and student fees. Administration costs dropped \$6,400 or 2.5 per cent below those of the previous year; plant operation and maintenance increased \$36,000 or 9.6 per cent; miscellaneous expenses increased \$51,000 or 73.5 per cent; special appropriations decreased \$28,800 or 21.3 per cent. The net operating expense of the Institute was at the rate of about \$6,200 per day (not including \$2,250 per day for research and payments for special purposes) as against \$6,000 per day during 1925-26 and \$5,444 per day during 1924-25.

Prorated among the 2,671 students in residence as of November 1, 1926, the time of Registrar MacKinnon's official count, the net operating expense was \$847 apiece or \$78 more than the per-student figure for 1925-26 and \$171 more than that for 1924-25. For 1926-27 academic expense came to \$514 per student, administrative expense to \$94, plant operation to \$153, the corresponding figures for the previous fiscal year being \$472, \$91, and \$132, respectively.

UNDER the will of Miss Mary Frances Drown, late of Brookline, the Institute has received a bequest of \$50,000 as a "Memorial to Professor Thomas Messinger Drown" [her cousin] to be held in trust as a permanent fund, and the net income thereof only to be used to establish scholarships for deserving undergraduate students. These scholarships are to be known as the "Thomas Messinger Drown Scholarships."

Dr. Drown, who died November 15, 1904, was for ten years a member of the Faculty of the Institute. He was

graduated from the University of Pennsylvania in the Class of 1862 and subsequently spent a considerable period abroad as a student, first at the Mining School of Freiberg, Saxony, and later at the University of Heidelberg. Upon his return to America he accepted for a year the position of instructor in metallurgy at Harvard. In 1874 he became Professor of Analytical Chemistry at Lafayette College where he remained for seven years, at the same time serving as Secretary and Editor of the Transactions of the American Institute of Mining Engineers. In 1885 he was made Professor of Analytical Chemistry at Technology and in 1890 he became Head of the Department of Chemistry, preceding the late Dr. Henry P. Talbot, '85. He filled the post until 1895 when he accepted the Presidency of Lehigh University.

Of Note in This Issue

Floods: Early last summer when The Review arranged with Mr. John R. Freeman, '76, for publishing an article by him on the Mississippi River and its control, it little reckoned that an unprecedentedly destructive flood in New England would make doubly pertinent a thorough-going consideration of flood control. His article on page 95 will do much to clear up popular misconceptions and it argues persuasively for the establishing of a hydraulic laboratory for the study of rivers.

The adventuresome trip of a Technology portable-radio expedition into flooded Vermont is described in the composite log reproduced on page 92.

Books: James P. Munroe, '82, Secretary of the Corporation and author of "A Life of Francis Amasa Walker," draws a striking parallel between the lives of Walker and Porter in his review of "An American Soldier and Diplomat: Horace Porter." Charles D. Maginnis, an outstanding Boston architect, comments on "A Study of Architectural Design." There are six other commentaries on current books of importance and interest to readers of The Review.

129th Meeting

EXCEPT for a lively discussion last year of the registration problem and a one-sided battle on football, the Alumni Council contributed little to its own entertainment, as a body of this sort might be expected to. Instead, it reached the point where it had to be entertained; members came to listen, not to talk; to be told things, not to question why. The meeting on October 31 of this year was entirely in this manner. The Executive Committee had arranged the program, a very entertaining program, which was presented with smoothness and dispatch, while Council members

loll'd comfortably in their chairs and complacently smoked the novel Alumni Council—Walker Memorial cheroots. It is quite possible that it has been these cheroots that reduced the Council from a legislative body to a lecture hall audience, or is the situation more serious than this?

The program of entertainment was in four parts. The Presidents of the three upper classes of the undergraduate body were present as speakers. D. Tullis Houston, '30, spoke on freshman rules. C. Brigham Allen, '29, spoke of the enforcement of the freshman rules; of the manner in which the junior class was organizing the freshman class; of the present state of that organization. Ralph T. Jope, '28, gave plans for the impending Field Day, emphasizing the measures taken by the undergraduates to prevent a recurrence of last year's disturbance. Holding his rhetorical powers somewhat in abeyance and using only a few of his Delsarte gestures, he gave an advance description of the glove fight which was used on Field Day and is described in the Undergraduate Section of this issue.

The next part of the program did not come off so well because the performers were not present. It had been expected that the retiring and incoming term members of the Corporation would be on deck to voice their retiring and incoming sensations for the benefit of the council. Roger W. Babson, '98, did arrive later on and voiced his incoming sentiments, together with a sudden and inexplicable sally of criticism aimed indirectly at the freshman rules discussion. President Stratton, just returned from a trip abroad, spoke briefly of administrative activities and told of the appointment of a dormitory committee of twelve to study housing conditions.

Former-Dean Alfred E. Burton delivered what was, in a sense, his swan song as director of the Dormitory Campaign. On December 1 he becomes director of the American Merchant Marine Library Association, and at that time ends his connection with the Dormitory Campaign.

The next feature was a report of the Secretary-Treasurer, and that was sufficient to constitute an entire division of the program. Finally, J. C. MacKinnon, '13, Registrar, presented some graphs showing the trend of registration at the Institute. The meeting ended with an impromptu speech by Allan W. Rowe '01 in behalf of his Advisory Council on Athletics to point out that members of the Council and all Alumni were privileged to purchase tickets for all athletic events at \$5.00. 'Twas said briefly and 'twas said beautifully.

Health Engineering

THE activity and wide influence of men who have studied in the Institute's Department of Biology and Public Health was convincingly demonstrated at the Fifty-Sixth Annual Meeting of the American Public Health Association in Cincinnati, October 17 to 21. At this meeting were more than sixty Technology men, and listed in the official program of speakers and authors were twenty-two. The Executive Secretary is Homer N. Calver, '14, and on the Governing Council are fifteen who have been connected with the Institute. Those sections in which these men are most active are Child Hygiene, Public Health Education and Public Health Engineering. It is significant that the Institute is playing so prominent a part in the socialization of medicine and in the betterment of public health.

During the course of the Association's meeting, a Technology breakfast was held, inspired chiefly by Professor Samuel C. Prescott, '94, Head of the Institute's Department of Biology and Public Health, and entertained by Charles G. Merrell, '88, President of the William S. Merrell Company.

Institute men are in the van of international health workers as well as national. Clair E. Turner, '17, Associate Professor of Biology and Public Health, was recently appointed to the chairmanship of the Health Section of the World Federation of Education



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LEARNING TO FLY

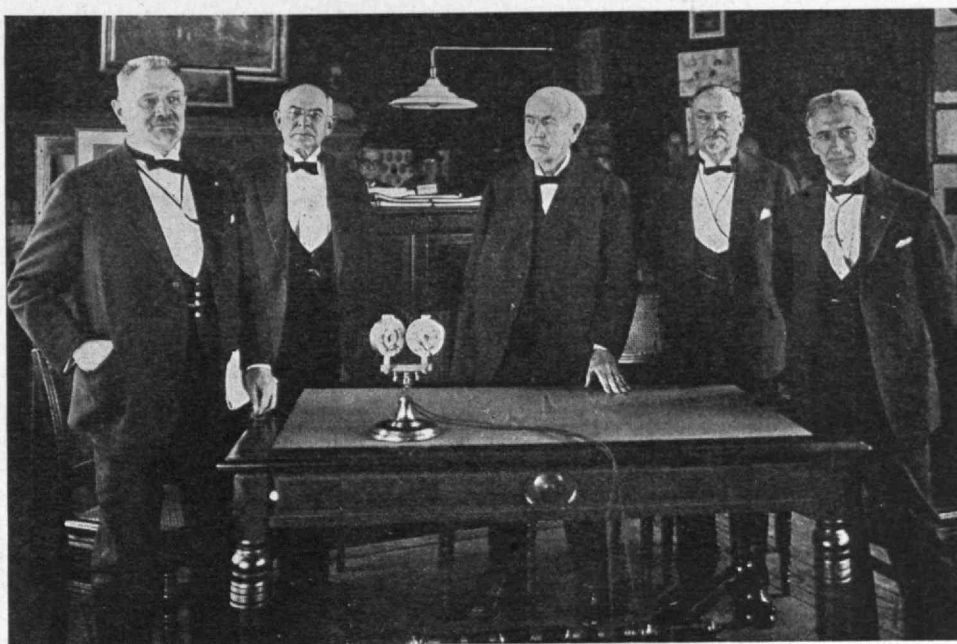
The Assistant Secretary of the Navy for Aeronautics, Edward P. Warner, '17, gracefully removing himself from a plane in which he has just finished a flying lesson

Associations. The purposes of this association are "to secure international co-operation in educational enterprises, to foster the dissemination of information concerning the progress of education in all its forms among nations and peoples, to cultivate international good-will, and to promote the interest of peace throughout the world." Professor Turner is well fitted to direct the Health Section of the body; his work in reorganizing the school health system in Cleveland and his research in Malden have won wide recognition for him. Further activities of the Department included the conducting this past summer of a Public Health Institute with the coöperation of the Metropolitan Life Insurance Company. The Institute offered to health officers, teachers, and other health workers, opportunity to obtain intensive instruction in "the essential principles as well as the presentation of the important aspects of public health work."

The Month in Aëronautics

FLYING boats are most readily adapted to conversion from commercial to war use in an emergency, and for that reason aircraft manufacturers in this country should direct more of their attention toward the development of the amphibian plane. With a vigorous plea for this thesis, Edward P. Warner, '17, Assistant Secretary of the Navy for Aëronautics and Professor of Aëronautical Engineering at Technology, addressed the aëronautical meeting of the Society of Automotive Engineers in New York on October 19. He, as chairman of the Society's committee for the meeting, had opened the three-day session on the previous afternoon, when Commander Ralph D. Weyerbacher, S. M. '14, discussed the use of metal in seaplane construction. "So far as the pilot's safety is concerned," said Commander Weyerbacher, "it is feasible to make a metal seaplane practically crashproof."

Later on in the program appeared Charles H. Chatfield, '14, Associate Professor of Aëronautical Engineering at the Institute, and, *in duo*, Lieutenant Albert F. Hegenberger, '17, and Bradley Jones, '10, both of the Army Air Corps stationed at Wright Field, Ohio. Professor Chatfield read a discussion-provoking paper on the relative merits of the monoplane as against the biplane. Lieutenant Hegenberger and Mr. Jones, whose aircraft instrument development work for the Air Corps was described by the former in the November Review as part of his account of his flight to Hawaii, presented a joint paper on the methods of overseas



ANNIVERSARY

Distinguished gathering at the Edison laboratories for "Edison Night," celebrating the 48th Anniversary of the invention of the incandescent lamp. At the extreme right is Gerard Swope, '95, President of the General Electric Company

navigation. Both have had years of experience in aërial navigation over all kinds of terrain and have jointly done much work to develop aviation.

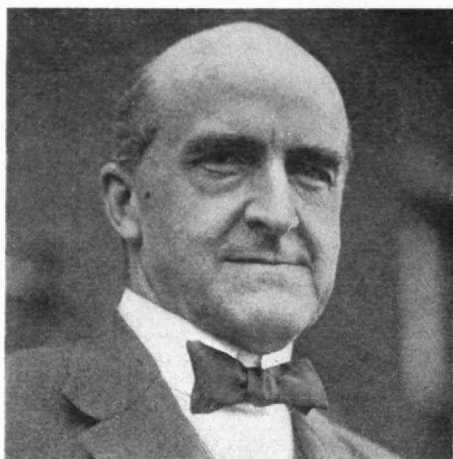
Other Technology men who have appeared in the aëronautical news of the month just passed include Porter Adams, '14, reëlected President of the National Aëronautic Association, and Lester D. Gardner, '98, the United States Department of Commerce's representative at the International Aviation Congress at Rome, Italy. In England, Major Gardner was the first American to witness a performance of an automatic "safety slot" for the wings of an airplane. By its use, any normal person will be able to learn to fly in a few hours without danger of a tailspin, it is said. He is reported to have predicted that within five years, every airplane in the world will be equipped with the new device.

Secretary Warner, early in November, made an official inspection trip to the Canal Zone. After his visit to the naval air station he expressed surprise that so little had been done there with aviation. He added that as soon as the Deficiency Appropriation Bill, filibustered by the last Congress, was passed, conditions would be bettered by the addition of 100 modern planes, an increased personnel, and additional hangars.

Textile Meeting

AT its annual meeting at the University Club of Boston, October 28, the Textile Institute Club voted to change its name to the Textile Research Council, and at the same time elected as its President, George L. Gilmore, '90, of the Middlesex Bleach, Dye, and Print Works.

The purpose of the Textile Research Council is to promote pure and applied textile technical research. For accomplishment in this field it awards diplomas



Wide World

COMMUNES WITH PELE

Dr. Thomas A. Jaggar, government volcanologist and former Head of the Institute's Department of Geology

and the title of Fellow of Research Council. Other officers elected included Charles H. Clark, '91, Secretary-Treasurer; Franklin W. Hobbs, '89; and Edmund E. Blake, '93, members of the Executive Committee.

The activity of the Research Council

reflects the new attitude in textile circles which favors modern industrial methods instead of those to which New England so long has clung. Additional evidence of this changed point of view was to be observed at the National Association of Cotton Manufacturers Convention in Boston, October 26 and 27. Chairman of a discussion group at this meeting—The Cotton Textile Institute—was Robert Amory, '08, and a paper was presented on "Humidifying Practice" by Albert W. Thompson, '96. Albert Farwell Bemis, '93, also delivered a paper on "Indian Hand Cotton Manufacturing," illustrating it with implements made in Gandhi School, Sabamarti, Abmidadad.

Royal Society Medalists

THE Royal Society of London for the Improving of Natural Knowledge, commonly referred to as the Royal Society, is awarding two of its annual gold medals to Technology men. To William D. Coolidge, '96, goes the Davy Medal for his work with the cathode and x-rays; to Arthur A. Noyes, '86, goes the Hughes Medal for his researches in the field of chemistry. Both men were formerly on the Institute's instructing staff, and from 1907 to 1909, Dr. Noyes was Acting-President of the Institute. Each has previously been recipient of medals from many other scientific societies.

Beloved or Hated by Pele?

IN a mountain observatory on the island of Hawaii, 3,973 feet above the level of the sea, Dr. Thomas A. Jaggar, government volcanologist, has for sixteen years been keeping watch upon Kilauea, the world's most reliable active volcano. Dr. Jaggar, who for fifteen years was a member of the Institute's Department of Geology and its Head for five, left his home on the brink of his own volcano last spring to look for volcanic evidences in the Western Aleutian Islands. There he is reported to have found interesting fields for further study: twenty large volcanos and signs of a recent eruption on Bogosloff Island. He expressed his belief that a new period of volcanic activity had begun on Bogosloff closely resembling the eruption of 1906, to the scene of which he journeyed in 1907 as the head of a Technology scientific party.* It was with some pride, therefore, that the National Geographic Society recently announced that Dr. Jaggar would lead their expedition to the Aleutian Islands next spring.

While Dr. Jaggar was away, Kilauea became spectacularly violent and early in the morning of July 7 four fountains of lava filled the inner fire pit of Halemaumau—three of them spouting the molten vitreous rock more than 100 feet into the air. Kilauea is a lava-formed cone with an outer crater three miles long and two miles wide, at the edge of which is Dr. Jaggar's home and the United States Geological Survey's Hawaiian Volcano Observatory of which he is now the director. Inside the outer crater is the more or less active lava-filled throat of the volcano, the 1,500 foot crater of Halemaumau, pictures of which are shown below and on the following page.

The July violence was in full accord with the native mythology which links Dr. Jaggar with Pele, the goddess of Hawaiian volcanos. One version has it that Dr. Jaggar has tamed the savage goddess until she dares express her feelings only in his absence; the other that Pele has a personal affection for her patient doctor, her violence being but a protest at his protracted neglect. But whichever be true, Dr. Jaggar missed this eruption, the preceding one in 1925, and one in 1924 because of foreign tours. He had been back from abroad but a few days, however, when eastern Alaska was rocked by severe

* Dr. Jaggar's "Journal of the Technology Expedition to the Aleutian Islands, 1907" was published in the January, 1908, number of The Review.



© E. Moses

KILAUEA VOLCANO

Halemaumau, the inner crater of Kilauea. On the brink of the outer crater is Dr. Thomas A. Jaggar's home and observatory

earthquakes and cables between Ketchikan, Juneau, Haines, and Skagway were severed. Seismographs in the eastern United States recorded earth tremors more violent than any observed in recent years. Dr. Jaggar studied the seismic records and warned port authorities in the Hawaiian Islands to prepare for the approach of a *tsunami* (an earthquake-caused wave of the sea, often erroneously referred to as a "tidal wave") dangerous to shipping. Detailed formal reports of the accuracy of his prognostications have not, as yet, reached this country, although in similar situations in the past he has predicted such effects in remote parts of the world with uncanny foresight.

The observatory at Kilauea may be traced back to 1898 when the Department of Civil Engineering and professors of geology set up a small geodetic observatory in Boston. Increasingly important work was carried on and, in 1909, it attracted the attention of the trustees of the Caroline and Edward Whitney estates who gave \$25,000 to the Corporation for the study of geophysics in Hawaii. Several trips to Kilauea were made by Professor Jaggar and others from the Institute, and in 1912, enough additional money was raised to insure an observatory there until 1917. Dr. Jaggar was there again in January of 1911, when the town of Hilo, thirty-one miles away, raised enough money to provide an observatory building. In 1912, he was relieved of his teaching duties to give his entire time to the laboratory, and when, in 1917, the observatory was taken over by the United States Weather Bureau, Dr. Jaggar remained in charge. Two years later, the United States Geological Survey took charge, with the Doctor still presiding over its destinies and communing with Pele.

Telling it to Gath

SOME ten years ago news of scientific progress was seldom chronicled in the daily press. "Too deep for the public," said some editors. "Dry stuff," said others. But a few bolder spirits sampled the contents of the retorts of science and cautiously asked their public to partake. And, surprisingly, the public did. Whereupon other editors grabbed spoons and began dipping with characteristic editorial avidity into this newly discovered source of news. It was like acquiring a taste for olives — the public munched a few and yapped for more.

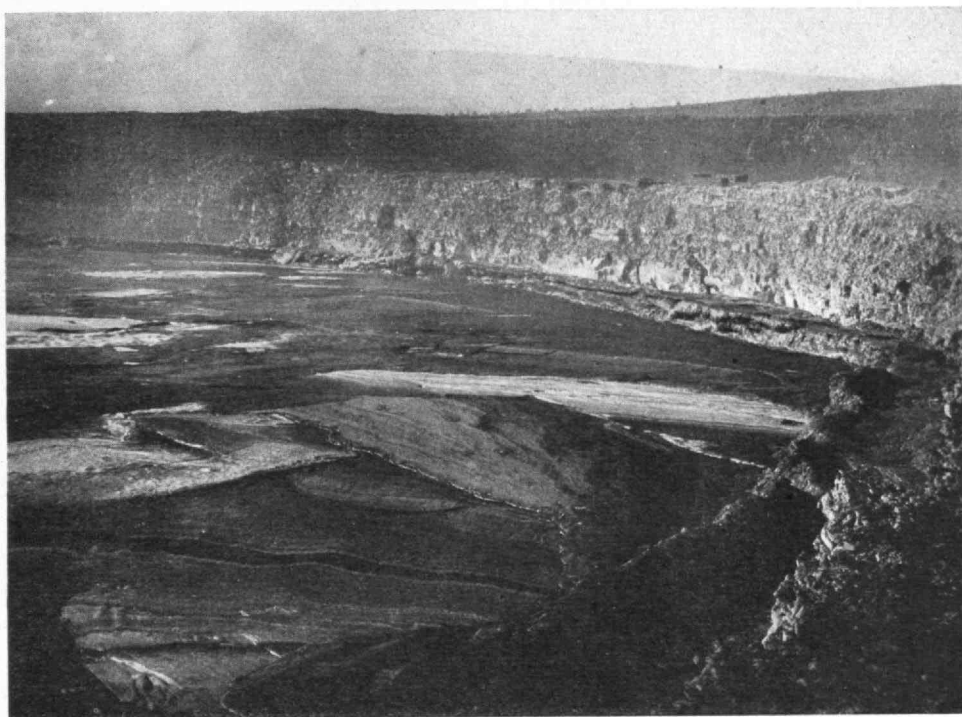
So today every progressive newspaper carries news of the achievements of science. Stripped of complex scientific terms, interpreted in terms of common understanding

that show their application to daily life, the accomplishments of science are now revealed to millions of newspaper readers.

But there was a time when scientists were the butt of vitriolic editorial jibes. They and their works frequently were held up to ridicule, not only in editorial comment, but in the news accounts of their doings. Discussing the early attempts of man to fly, Mark Sullivan in "Our Times," recalls the storm of editorial ridicule and stinging criticism that followed Samuel P. Langley's ill-fated attempt to construct an airplane that would support a man. The same tendency to skepticism and ridicule was apparent in connection with the pioneer flights of the Wright brothers. The newspapers of the country were very skeptical of the advisability of giving any space to their first flight in a heavier-than-air craft.

As a result of the attitude of the press, scientists looked with deep suspicion upon the early efforts of editors to interpret their works. Doors were closed and voices were hushed when a reporter appeared, and for many years the newspapers found it very difficult to get any information from the world of science.

Happily that day is past. The newspaper editor has proved the good faith of his interest in the progress of science. The reporter has shown himself to be worthy of the confidence of scientists, and newspapers have come to understand that facts, properly interpreted, tell as fascinating a story of achievement as any amount of spectacular conjecture. The editor and the scientist know more about each other now, and this new relationship has brought a clearer understanding of the natural limitations of both groups. In a recent issue of *Science*, official journal of the American Association for



HALEMAUMAU

High level of lava in Halemaumau, the active throat inside the large crater of Kilauea. Mauna Loa, companion volcano of Kilauea, may be dimly seen in the distance



CHARLES H. LEVERMORE

Winner of the Bok Peace Prize in 1924, and from 1888 to 1893 a member of the Faculty of the Institute, who died October 20. See below

the Advancement of Science, attention is directed to the steadily increasing amount of newspaper space devoted to news of scientific progress. It expresses satisfaction that recent meetings of the association have been carefully reported by the leading newspapers.

The same interest shown in the meetings of the American Association for the Advancement of Science is manifest at Technology where newspaper men are often to be discovered in search of news of the work that goes on within the Institute's many laboratories. They come from newspapers far and near, and from the press associations and, so far as is known, none of these has violated his trust to present the news in its true light.

This new relationship between science and the press "is becoming an important part of the teaching profession in a broad sense," says *Science*. And the voice of the New York *World* reiterates the statement: "Science is news!" Even the cartoonist is aware of it. Witness the opposite page.

An Advocate of Peace

CHARLES Herbert Levermore, from 1888 to 1893 a member of the Faculty of the Institute, and winner of the Bok Peace Prize in 1924, dropped dead, October 20, while addressing a women's organization at Berkeley, Calif., on plans to promote world peace.

Dr. Levermore was graduated from Yale in the Class of 1879 and took his graduate work at Johns Hopkins with Woodrow Wilson as a fellow student. All his life he was a worker for peace and before the World War was a determined pacifist. Nevertheless he became, during the conflict, one of the most ardent supporters of President Wilson and an insistent advocate of war to victory as a means of insuring permanent peace.

Before coming to Technology as an Assistant Professor of History in 1888 he spent a year on the Faculty of the University of California. His promotion to Associate Professor of History came in 1889 and, in 1892, he was made Professor of History. He resigned to become principal of Adelphi Academy in Brooklyn and after three years at this post was called to the Presidency of Adelphi College. He was director of the College and University Bureau of the World Peace Foundation in Boston until 1917, in which year he became Secretary of the New York Peace Society. After the war he was chosen, in 1919, Secretary of the World Court League and the League of Nations Union.

On February 4, 1924, he received the American Peace Award offered by Edward W. Bok for the best plan to bring world peace and amity. The presentation, which was made in Philadelphia by John W. Davis, former ambassador to the Court of St. James, was in the form of a check for \$50,000, one-half the prize offered. The other \$50,000 would have been given to Dr. Levermore if his plan had been indorsed by the United States Senate or by a majority vote of the American people through a national referendum.

Clock and Carillon

FIFTY-SIX thousand American engineers will join in giving to the University of Louvain a clock and carillon for its library tower as memorials to American engineers who died in the World War, it is announced by the Engineering Foundation. The engineers are members of the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers.

The proposal was advanced by Edward Dean Adams, '69, of New York, leader in the development of hydroelectric power at Niagara Falls and delegate of the Foundation to the fifth century celebration at Louvain last summer. In a report submitted by him to the Foundation he said:

"The library building is one of the most beautiful structures in Europe. It will be a complete gift from Americans to Belgium, in appreciation of national fortitude and of contributions to the advancement of learning and the progress of civilization.

"To a people whose bells for many generations



OFFERS PRIZE

Godfrey L. Cabot, '81, Vice-President of the Federation Aéronautique Internationale, who offers a cash prize of \$10,000 for the perfection of a device which will permit aviators to see terrain through fog

have been famous for their sweet music there could be no more acceptable reminders of American good-will. Here is an opportunity for American engineers to have a definite part in cementing the friendly, enduring bonds and to give expression to their highest sentiments."

Dr. Adams took to Louvain four seedlings of *Sequoia gigantea* as memorials of the participation of the four American engineering societies in the fifth centenary celebration of the University at which he received its honorary Doctorate of Science. These four little California "big trees" were planted by him and his grandson, Kempton Adams, in front of Louvain's new engineering building, as pictured in *The Review* for November. They will be known as the Engineering sequoias, each representing one of the American engineering groups.

Fuels

THE growing interest of American engineers in the important problem of efficient fuel utilization was indicated by large attendance and lively discussion of papers presented at the First National Fuels Meeting, held in St. Louis from October 10 to 13, under the auspices of the American Society of Civil Engineers.

Professor R. T. Haslam, '11, until recently Director of the School of Chemical Engineering Practice, and now a member of the research staff of the Standard Oil Company, and H. C. Hottel, '24, of the Department of Chemical Engineering, presented a paper on "Combustion and Heat Transfer." Theirs was a discussion of those types of heat transmission peculiar to combustion processes.

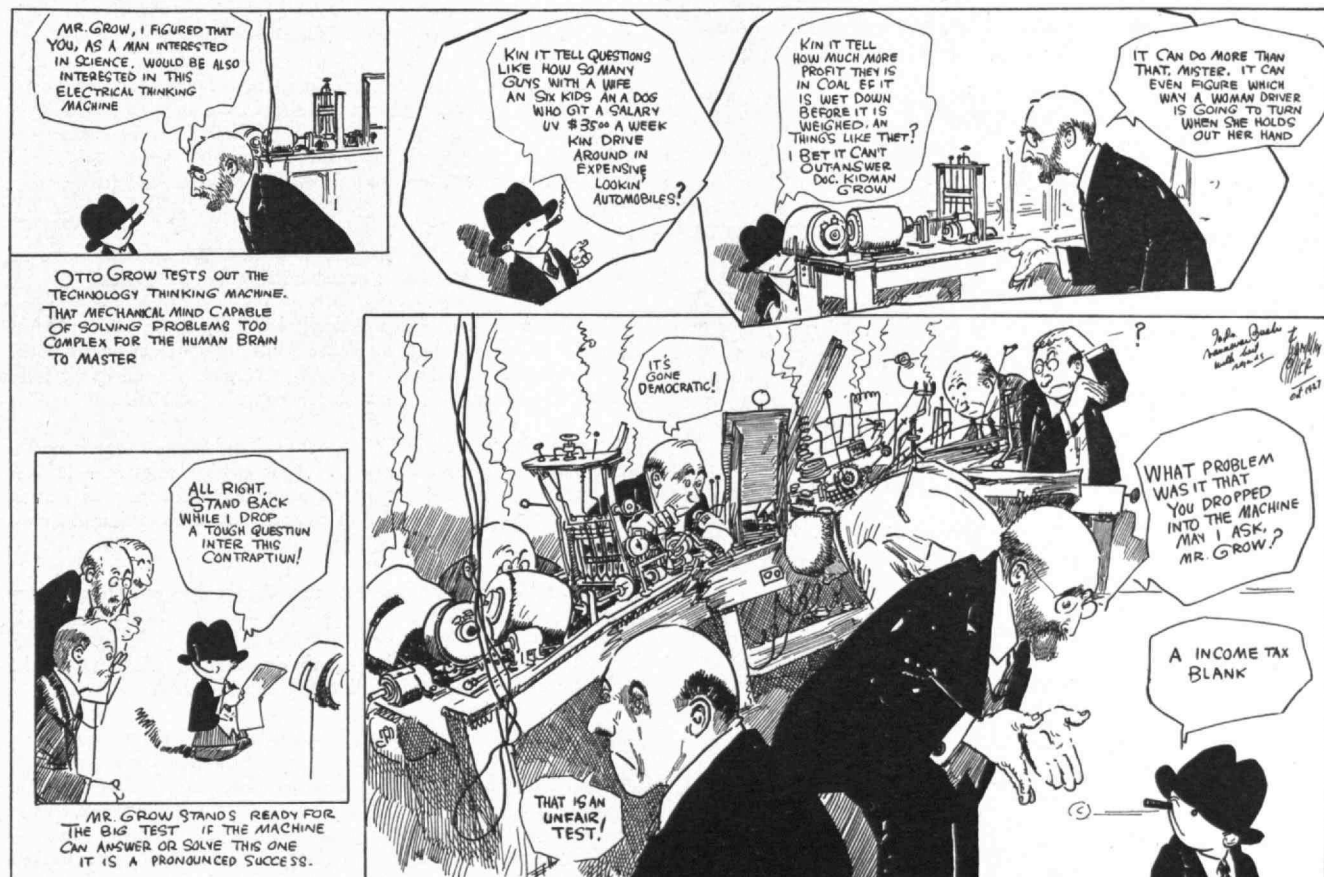
In the Power Plant Section of the convention H. M. Cushing, '99, Chief Engineer, Buffalo General Electric Company, and R. P. Moore, presented a paper on "Direct-Fired Powdered-Fuel Boilers with Well-Type Furnaces at Charles R. Huntley Station." The authors concluded that the tests demonstrated the feasibility of burning low-fusion ash coal in comparatively small furnaces at high maintained efficiencies. The paper aroused much comment, many of the engineers disapproving of design moving in the direction of smaller furnace volume for a given heat-liberation rate.

Technology Etchers: John Taylor Arms, '11

COBWEBS," the etching on the cover of this issue, is by John Taylor Arms, '11. Its precise delineation of the New York scene is a characteristic of Mr. Arms' work; when at the Institute he was noted for his extraordinarily meticulous and accurate draughtmanship, and his work since then has continued to reflect that manner.

Mr. Arms was born in Washington, D. C., in 1887. After graduating from the Architectural Department of the Institute he practised architecture in New York for five years. This was interrupted for service in the World War, but upon his return to civilian life he followed the bent of a prior hobby and took up graphic art as a profession. Since then he has chiefly worked in two mediums, pure line etchings and aquatints. One of his aquatints will be reproduced on the cover early next year.

The etching, "Cobwebs," was lent to *The Review* by Charles E. Goodspeed and Company.



Courtesy, Boston Advertiser



SATURDAY, NOVEMBER 5, 1927

3:20 P.M. Walcott and Clapp, carrying one complete BECR portable outfit and another complete outfit which had been designed for use on the car, traveled in Clapp's car. Brolly and Goldsmith, in the former's car, carried the second complete BECR outfit. (BECR: Boston Edison Communication Research for which the Institute designed and built these sets.)

5:00 P.M. Chinn who remained at Technology telephones schedules and wave lengths to Macintosh. Round Hill was to be ready at 6:00 P.M.

6:50 P.M. Party stopped about 2 miles east of Gardner, Mass., to set up one outfit. Immediate and satisfactory communication with Institute was obtained. Round Hills was not ready due to repairs required on antenna system. Schedule made with Technology for 10:30.

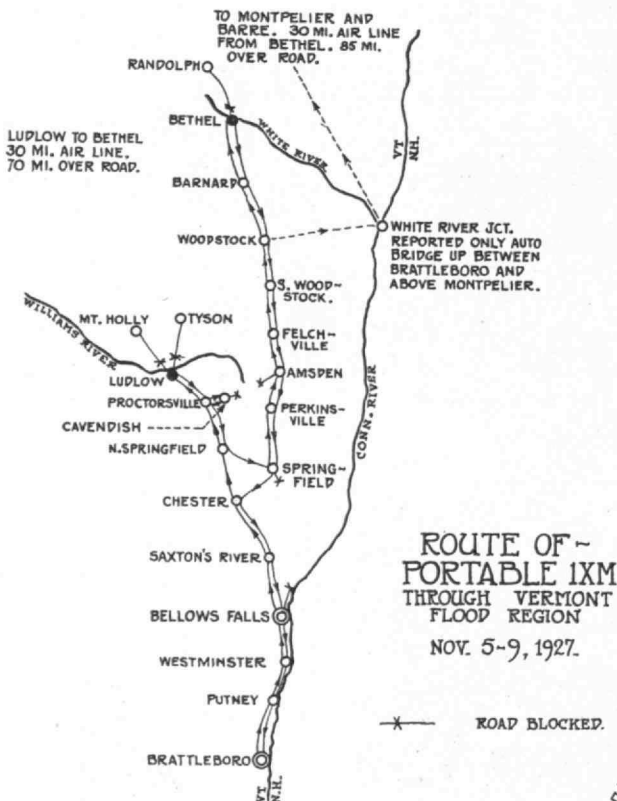
7:00 P.M. Party eats in Gardner.

7:30 P.M. Round Hills and Technology in constant communication.

10:30 P.M. Tried to phone from Greenfield to Institute that party would go to Brattleboro. "Indefinite Delay," so party proceeded.

10:47 P.M. Phone call reported at Cambridge. Chinn knows party reached Greenfield.

11:20 P.M. Party arrived at home of Mr. Rice, editor of Brattleboro Reformer and was given a cordial welcome and the freedom of the place



Portable 1XM In

Composite log of the Technology Flood isolated areas and transmitted

VERMONT'S worst flood was raging on November 4. Howard A. Chinn, '27, and Lloyd T. Goldsmith, assistants on the E. H. R. Green short wave research in the Communications Division of the Department of Electrical Engineering, worked in the Institute's radio laboratory late into the night in an unsuccessful attempt to connect with stations in the flooded district. Next morning, these two, with James K. Clapp, '23, and A. H. Brolly, both of the Communications Division, prepared to send a portable station into the flood zone. Only five hours later, three radio equipments, with batteries for power, were loaded into two automobiles for the northward trip. With them went Paul S. Walcott of the Associated Press.

For the trip, each set was remodeled to operate on wave lengths of 45 and 85 meters, and at the Institute, two transmitters and a new antenna were put in. A new

as necessary to establish the field station. Immediately put up one outfit. Clapp and Brolly try to put up antenna in dark. Clapp tried twice to throw knife with cord attached over branch of tree and can't hit the right tree. Brolly takes a shot and tosses the knife, minus the string, over the correct tree and over the cliff into the brush below. Finally decides the only way is to climb the tree; fixes antenna o. k. General refreshments for all hands, thanks to Mrs. Rice.

SUNDAY, NOVEMBER 6, 1927

1:15 A.M. After standing by while Goldsmith tried to get in touch with Cambridge, Walcott and Clapp go to bed. Brattleboro hears Cambridge and Round Hills O. K. but could not make contact.

2:20 A.M. Cambridge hears Goldsmith at Brattleboro and tells Round Hills what wave length Brattleboro is using. Round Hills gets contact with Brattleboro and later Brattleboro gets in touch with Cambridge. The difficulty in establishing this net work was due to the wave meters having been put out of calibration by the jouncing in transportation. Schedules between Cambridge, Round Hills, and Brattleboro were arranged for 9 A.M. to continue until further notice, using 80 meters.

3:15 A.M. Brolly and Goldsmith go to bed. Round Hills turns in. Chinn telephones Associated Press and reports good night.

7:00 A.M. Walcott, Clapp and Brolly leave Brattleboro after breakfast and proceed to Bellows Falls, following route away from the river. Schedules made before leaving for 10 A.M. and every hour thereafter. Goldsmith left in Brattleboro with a station.

8:00 A.M. Party stops at Bellows Falls; inquiries as to roads northward yield no reliable information. Inspect damage to town — bridges damaged and impassable, power station damaged, railroad station and yard flooded, great piles of wreckage near bridges and dams. Several pictures taken.

9:10 A.M. Communication between Cambridge and Brattleboro carried out on schedule.

9:50 A.M. Round Hills joins Cambridge and Brattleboro and the three stations maintain communication continuously.

10:00 A.M. Party attempts to leave Bellows Falls via road north, along Connecticut River. Short distance out of town a point was reached where the road had been under water. About four inches of slime covered the road. Cars could be made to stick only by carefully riding the crown of the road. Advanced slowly, struck water and did not dare to proceed. Backed up along road, slid into ditch, backed up hill O. K., turned around. Returned to Bellows Falls and left on

Flooded Vermont

Radio Expedition that penetrated news of the flood, November 4-9

antenna was also installed for the M. I. T. experimental station on Col. E. H. R. Green's Round Hills estate where Gordon G. Macintosh is operator.

Through Technology, Round Hills, and a station which the party set up in Brattleboro, the A. P. received its first authentic account of the flood's ravages in the vicinity of Ludlow and Bethel. Dispatches bearing a dateline: "M. I. T. flood radio station 1XM" were handled by this field party.

In addition to the news, much valuable data and experience were obtained by the Technology party. The accompanying article is a composite "log" or record of the 504 mile trip, shorn of its less striking technical details. It is a vivid account of an unpremeditated emergency trip. The success and value of the expedition presages many similar opportunities for Technology in time of disaster.

road over hills, passing through Westminster Station, Saxton's River, Chester, North Springfield, and Proctorsville on way to Ludlow.

1:15 P.M. Cambridge and A. P. worried, as no word had been received from party.

1:50 P.M. Round Hills listens on 45 meters for Brattleboro.

1:55 P.M. A. P. wants latest word from party. Chinn excited, tells Brattleboro, "Send all available news — A. P. in big sweat." This remark picked up by the New York World who published it and put it on their wires. Appeared in many papers.

2:00 P.M. Party sets up equipment on hill outside of Ludlow, in attempt to obtain a favorable location. Reception from Cambridge and Brattleboro immediately obtained. Contact made between Ludlow and Cambridge although reception at Cambridge was only fair. Started transmission of press dispatches.

3:34 P.M. Brattleboro picks up signals from Ludlow; too weak to read.

4:00 P.M. Ludlow's signals improved to readable at Brattleboro.

5:20 P.M. Concluded transmission of press to Cambridge because of cold. The wind was high, with flurries of snow and the temperature below freezing all the time that this work was being carried on. Clapp sat in the car in a cramped position for more than three hours until too stiff and cold to continue operating. The apparatus had been placed there to keep it out of the weather.

5:28 P.M. Cambridge telephones press to Associated Press in Boston.

5:30 P.M. Dismantled set at Ludlow and moved down into the village.

6:00 P.M. Party had something to eat. Ludlow was in darkness and had no water supply. No garage space could be obtained as the garages were filled with cars from flooded areas. The cellar of the inn had just been drained to a point where a fire could be started, when we arrived. The car radiators were drained.

7:00 P.M. Set up the radio equipment in the front room of the inn; stretched antenna and counterpoise wires along the piazzas, first and second floors. Found it impossible to satisfactorily operate the transmitter on this antenna system. Brolly changed antenna and counter-wires to run away from inn, hanging the counterpoise on a saw horse and the antenna from the top of a garage door. In absence of operation of radio a phone call was put in for Brattleboro, "indefinite delay."

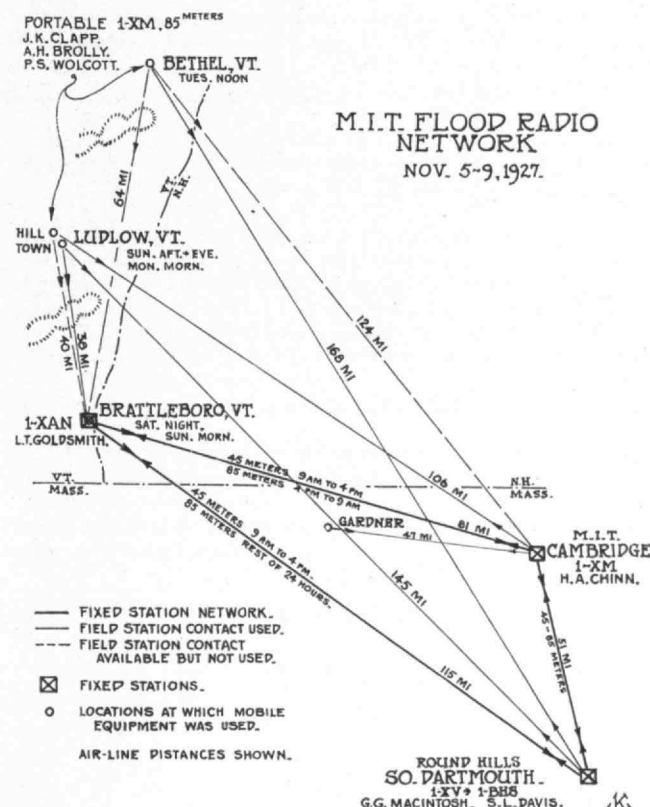


9:00 P.M. Brolly makes contact with Goldsmith in Brattleboro. Phone answered by Brattleboro at moment radio contact with Brattleboro was established. Brolly tried to get his money back. No luck! Walcott goes to bed. Clapp starts transmission of press dispatches continuing until 12:30 A.M. During this transmission Round Hills picks up the Ludlow signals, too faint to copy.

MONDAY, NOVEMBER 7, 1927

1:00 A.M. Brattleboro phones press to A. P. Boston; A. P. says send it by radio next morning.

4:00 A.M. Walcott, Clapp and Brolly turn out in a hurry to the call of "Hurry up boys, the whole town's burning up!" Clapp so sleepy can hardly open his eyes, until Walcott pulls up the window shade and says "Hop to it, boy, look at those sparks!" Clapp looked and saw a veritable snow-storm of sparks whirling by the window and promptly got busy getting on some clothing. Cars cold and without water in radiators. Clapp and Brolly grab a bucket and run down to river, slipping in the mud and stumbling over drift at the water's edge but finally bring up enough water to fill up the cars. Brolly asked Clapp what time it was. Clapp said, "I don't know whether I was asleep five minutes or five hours." Get motors going and idling so that quick movement of party could be made. Meanwhile Walcott was worrying about radio equipment in the inn, for if the inn burned the telephone service would be completely shattered, as the building housed the exchange, so that the radio would be the only possible means of communication. High wind caught up showers of sparks from the burning three story frame bakery and rained them down all over the roofs in the lower part of the village. Bakery had been running



all night making bread for Ludlow and vicinity. (No other choice) Last job was making doughnuts. Fat flared up and started the fire. The building was burned completely to the ground. Owing to the light fall of snow during the afternoon, the wind-blown sparks did no damage. Although several fires were started in various parts of the town, alert men on the roofs and at various points immediately put them out. No point in trying to make contact at this hour.

5:30 A.M. Party to bed.

9:00 A.M. Brattleboro tries to send press news of fire to Cambridge; signals fade; Brattleboro and Cambridge operate successfully on 45 meters. Contact with Round Hills; interruption due to car being taken out of garage, making it necessary to move antenna. Sent out news of Ludlow fire. Set schedules for 11 A.M. Telephone delay between Round Hills and Boston A. P. News of fire, however, beats land wire rumors in by 30 minutes in spite of all delays.

10:30 A.M. Party to barbers; no water, no wash! But the shave sure felt good! Clapp first on account of schedule with Round Hills. Two small boys for haircuts, Brolly next! Walcott loses out, see below.

10:45 A.M. Cambridge, Brattleboro and Round Hills all in communication on 45 meters.

11:00 A.M. Kept schedule. A. P. suggests via radio that party proceed to Randolph from which but little indirect news had been received. Sets immediately packed up. Walcott keeps whiskers intact. Fueled cars — only one gas station in town with any gas. Five days' mail in post office none had left. First going out today on a truck.

12:15 P.M. Party leaves for vicinity of Randolph. At Proctorsville, the party turned off to Cavendish to see destruction there. It was the greatest in extent of changes in river bed of any which we saw. A great cut had been made, removing a large sand hill and leaving a pit about one-quarter mile across and from 30 to 150 feet deep, extending to a considerable distance below the normal river bed. Eight houses were completely destroyed and washed away; many more, badly damaged. The school perched on the brink of the washout, with a third of it hanging over the edge. Military guard posted about town to keep all persons from edges of banks, which were constantly sliding. Returned to Proctorsville, as this was the only way we could leave Cavendish, and proceeded to North Springfield, Vt. Beyond North Springfield we had to stop and turn back again, as the approaches to the bridge on the main road were gone, though the bridge was intact. Got into Springfield over a hill road. Stopped there for sandwiches and coffee. Hot! Inquired for more information as to roads to Bethel and Randolph. Reports contradictory.

3:30 P.M. Left Springfield for Woodstock over a "Hill" road, since there were no bridges which could be washed out. Passed through Perkinsville, Felchville and South Woodstock.

5:00 P.M. Stopped in Woodstock for coffee and sinkers, also hot! Tried to find location for equipment in the town but could not see much as it was pitch dark. Tried to phone Brattleboro. "Indefinite delay." Put up at inn. Met Coolidge and Johnson, news movie men. More info on roads. — At this time Cambridge, Round Hills and Brattleboro in constant communication, also on lookout for party.

9:30 P.M. Brolly and Clapp turn in. Walcott waits until 11:15 P.M.

11:30 P.M. Mrs. Chase asks Brattleboro to aid in location of her husband, Judge H. B. Chase of the Vermont Supreme Court, who had been missing since Thursday and believed to be flood victim. Inquiry sent to Cambridge, thence to A. P. Assurance of his safety returned to Mrs. Chase by Goldsmith at 11:45 P.M. New York Times next morning carried story on front page.

TUESDAY, NOVEMBER 8, 1927

1:30 A.M. Cambridge, Brattleboro and Round Hills give up watch they have been keeping since 5:00 P.M. for the field party.

6:00 A.M. Party up and at breakfast.

7:00 A.M. Underway for Randolph after getting gas and water for cars.

9:00 A.M. Cambridge, Round Hills and Brattleboro in constant communication.

9:30 A.M. Arrived at Bethel, via the "hill" road through Barnard. Road still badly soaked, but quite passable in early morning as the surface was frozen hard enough to support a car. Easiest country travel yet encountered. Inspected damage, which was quite spectacular. Railroad bridge had been weighted down with engine, tender and coach. Bridge went out; engine and cars deposited about 100 yards downstream, bridge about 30 yards. All that was left over the river were the two rails, with no ties, hanging like cables. Bad cut under platform of station and approach to the bridge. Several pictures taken here. Temporary foot bridge being completed, suspended on cables over river. Went over it into upper town. Tried to obtain a car in which to go up to Randolph carrying up the radio set which was permanently carried on Clapp's car. Wanted to send down news from Randolph to the BECR field set at Bethel, for transmission to the fixed stations. Gas commandeered for trucks working on roads. No passenger cars running. Phone calls to Randolph, seven miles away, subject to "indefinite delay."

10:30 A.M. Back into Bethel, lower town, where cars were left. Obtained permission to use porch of a residence on which to set up equipment and on top of that borrowed the good lady's broadcast receiving antenna. This saved Brolly another monkey trip into the trees! Stretched up a counterpoise and was ready to operate at a few minutes of 11. Heard Round Hills immediately. Sent several calls with no result.

11:15 A.M. Picked up 1 BHS, S. L. Davis, Resident Engineer for Colonel Green at Round Hills, calling us. Started to transmit press, but had some difficulties. Asked Davis to get Macintosh of the Technology station on key. Clapp's hands get cold; tries to keep them warm by blowing on them — no luck. Noise of plane overhead interferes with reception.

12:30 P.M. Break transmission to Round Hills to accept Mrs. Graham's kind offer of a hot cup of coffee and hot bread.

1:45 P.M. Completed transmission of press despatches from vicinity of Bethel and Randolph, giving first authentic information of conditions in this locality. Ask Associated Press for further instructions. A. P. asks that we try to get to Barre. This would take full twenty-four hours, owing to the great detour and conditions of the roads. A. P. informed and after a considerable wait reply that Barre has telegraphic service just opened up. Request us to return to Boston as most districts now have reliable, although restricted, communication service.

2:42 P.M. Closed down Bethel station, packed up, and returned to Woodstock, thence to Springfield for the night. Got both cars mired near Barnard. Two men on job of repairing roads were driving a horse and cart up as we got stuck. They came over and gave us help. At Springfield we tried to phone Brattleboro. "Indefinite delay."

3:15 P.M. Round Hills sends information about movements of party to Cambridge and Brattleboro.

WEDNESDAY, NOVEMBER 9, 1927

6:30 A.M. Left Springfield for return to Brattleboro. Temperature 28 degrees.

8:50 A.M. Arrived at Mr. Rice's in Brattleboro. Final communication with Round Hills from that point. Cambridge standing by.

9:30 A.M. Brattleboro station packed. Left for Boston.

4:00 P.M. Arrived M. I. T., Cambridge.

8:00 P.M. Schedule kept between Cambridge and Round Hills to inform Macintosh that all hands had landed safely.

Needed: More Science in Flood Control

A survey of the flood control methods utilized in the Mississippi valley and some pertinent recommendations (in particular, the establishment of a laboratory for the study of river hydraulics) for improved procedure

By JOHN R. FREEMAN, '76

WE have for consideration a problem which considered broadly is the greatest hydraulic engineering problem in the world. It is not new. About seventy years ago the United States government, through the Army Engineers, started the most intensive study of the hydraulics of great rivers that had ever been undertaken. It was carried on under two young lieutenants, each about twenty-four years old, A. A. Humphries and H. L. Abbott. First of all, libraries and text books were searched, and an admirable bibliography was prepared as a starting point, and a review was made of the state of the art all over the world.

In the course of about five years much field work was performed and the derivation of fundamental formulas was attempted. The results were set forth in a big, thick volume entitled "The Physics and Hydraulics of the Mississippi River." This was a wonderful beginning on the general problem of river hydraulics. Then came the Civil War, and this kind of work in America stopped. It has never been taken up again on any such scale. Some of these early formulas and conclusions were premature. Measurements of the velocity of the river current by the method of double floats was afterward found less accurate than supposed and has long since been superseded by measurement with the current meter. In the sixty years that followed this publication, while detached items of new data have been secured and the *art* has been somewhat further developed, the *science* of river hydraulics and river control has slumbered. It still slumbers in America and most other parts of the world. It has had some awakening in central Europe in recent years, mainly through the remarkable developments of hydraulic laboratories in Germany, but river and harbor hydraulics with their problems of flood control, the training of rivers to dig their channels deeper, to cut through sand bars, to refrain from gnawing at the foot of a bank beneath a dike, and so on, still is far from having been advanced to the status of an exact science.

I have been interested in flood problems and river hydraulics, on and off, for about fifty years. It is fifty-one years since I graduated from the Civil Engineering Course at M. I. T. Eight or ten years ago I became intensely interested in these flood and river problems while I was studying the control of the Yellow River in China, and the rehabilitation of the Grand Canal. Incidentally, I sought the aid of Professor Hardy Cross,

a graduate of Technology in 1908, also of Harvard, and at that time assistant professor of Civil Engineering at Brown University. In consultation with me he spent a large part of his time for eight months going through everything that could be found relating to river hydraulics. He sought data here in the library of the Institute, which among a wealth of other treatises, contains Loammi Baldwin's remarkable library, which ninety or one hundred years ago probably was the finest engineering library in America. It is noteworthy that its treatises on hydraulics were largely in Italian or French. He also worked through the Harvard Library, the Boston Public Library, the New York Public Library, the Library of the National Engineering Societies in New York, the Library of

CATASTROPHIC floods have caused destruction and death in two sections of the country this year and a discussion of their prevention is no less important to New England than it is to the Mississippi valley. The Review is fortunate in being able to bring to general attention, by publishing the accompanying article, a significant contribution to the literature on the subject by an authoritative and noted engineer.

It is not necessary to introduce the author. His work on the Panama Canal, on the Yellow River in China, on the great Keokuk dam, and on numerous other notable projects have placed him at the head of his profession. Last spring he was invited to speak before the Faculty Club and the accompanying article is an extension of his remarks before that body. During the summer he visited European hydraulic laboratories and was able to observe first-hand this efficacious method of investigation which he so strongly advocates for the study of American floods. Mr. Freeman points out the absurdity of the proposed spill-ways, storage-reservoirs, and reforestation plans soon to be submitted to Congress.

Congress in Washington, and in brief, studied in every place that we could think of as worth while. I should have mentioned first of all the Corthell Library at Brown University, which is one of the richest in books on river and harbor engineering. Elmer Corthell was James B. Eads' assistant in building the jetties at the mouth of the Mississippi, and afterward engineered on his own account much important river and harbor improvement in South America and elsewhere. He bequeathed to his Alma Mater the library that he had collected during a very active life.

Professor Hardy Cross thus compiled for me more than a thousand closely typewritten pages of condensed abstracts from these various authors. When he summed them up he found he had collected diametrically opposite opinions, expressed by equally eminent

authority, on almost every important question relating to river and harbor engineering.

The whole state of the science of river hydraulics was found very largely to be like that of chemistry when they talked about phlogiston or in that of electricity before they had the C. G. S. units of measurement. Conclusions and rules of practice were very largely matters of opinion, with very few definite theories or formulas that rested on a sound scientific basis, and the rules of river and harbor engineering continue very much in that condition today.

I

Forty years ago, following the building of the Eads jetties and the experience of many floods, the Mississippi River Commission was formed, and it has practically had charge of the problems of flood control ever since. The Federal Government had ceded these low-lying lands obtained in the Louisiana purchase to the States with the clear understanding that they were to take care of their flood control. Thus, the subsequent contribution of the Federal Government toward levee building and revetment has been on the theory that the water would aid navigation. About thirty years ago, after ten years of experimenting, in course of which, for example, about two million dollars was expended in full-scale experiments on channel control in the Plum Point Reach — which was a failure — the Commission apparently got tired of experimenting, or felt that they need not go much further in that line. Experiments on a model in a laboratory are vastly cheaper than experiments with the river itself.

Scientific research into matters of cause and effect of the erosion of banks, the building up of gravel bars, the under-cutting of levees, the laws of percolation, and so on, seems to have mostly stopped thirty years ago, with the decision that levees, revetment and dredging of bars were the three rules of action for all future time. It was shortly after this time that the "fleuss-ban" laboratory



SANDBAGGING THE RIVER

A crevasse is dammed with sandbags during the 1922 Flood

idea began to be actively developed in Germany. The many problems of river control were then taken into laboratories to be studied with great success.

The Commission, thirty years ago, seems to have settled down to a firmly established policy in accordance with which most of the construction work on river control has been done. For its foundation this had three chief items. One was that the so-called levee system was the correct system. High levees were to be made continuous along the river, confining floods to about a mile in width instead of permitting them to spread out thirty miles more or less in the state of nature for hundreds of miles below Memphis. It was concluded to be probable that the river, being so confined, would naturally dig its channel deeper, giving the water a better chance to flow off, or that whatever happened the sediments would not accumulate within this narrowed channel to an extent that would compel dikes to be continually built higher.

The second main item of policy was the protection of caving river banks along concave shores of river bends. This continuous caving and shifting of channel in the state of nature, cuts away nearly a square mile of land each year. These caving banks were to be protected by building revetments of submerged "mat-tresses" composed of small willow trees and branches held down by small boulders. Levees were to be built and paid for in coöperation with the localities benefitted, but revetment was to be paid for wholly by the Federal Government as an aid to navigation, all to be built as fast as Congress provided the money. The third item was that navigation channels were to be dredged through

CREVASSE! CREVASSE!

A remarkable photograph of the Teale Cabin crevasse just north of Vicksburg taken two hours after the break last spring

Wide World



the gravel bars, which nature builds up after each great flood across the river where its bends reverse their curvature. Thus levees, revetments and dredgings have been the three main items in the settled policies of Mississippi River control.

II

For twenty or thirty years there appears to have been remarkably little new scientific research relating to many of the underlying elements of river control. To an outsider the idea has seemed to be that the problem was *res judicata*, and that it would be almost *lèse-majesté* for any one to suggest that the problem needs to be studied further in a more scientific way. Meanwhile, the work of building revetments and levees has gone on as rapidly as appropriations could be secured from Congress and the states. This has been limited to about \$10,000,000 to \$12,000,000 per year, a tidy sum, but small when spread in spots far apart over a length of river bank of about 2,000 miles, for the lower reaches of tributary rivers must also be protected. If revetment is omitted on convex shores and islands there remains nearly 1,000 miles of shore line needing revetment.

The U. S. Army Engineers in charge of this construction have done wonderfully good work in carrying out these two main ideas of levees and revetments. I suppose there is no construction work of this kind along any river in the world as good as some of that which our Army Engineers have built along the Mississippi under the general rules laid down by the Mississippi River Commission, of which three of the members, including the chairman, are ex-officio Army Engineers.

The type of levee has been changed from old dikes, many of them only eight feet high, and too thin to withstand the percolation of a long continued flood, to levees twenty or thirty feet high, built of a thickness such that the hydraulic gradient through the cross-section is commonly not steeper than 1 to 10.



Official Photograph, U. S. Army Air Corps

WATER EVERYWHERE

McGehee, Arkansas, on June 1, 1927

Coöperation with state levee boards and local levee districts has been admirable under a recent plan by which two-thirds of the cost of levees is paid by the Federal Government. There has in all been 1,500 miles or more of levee built to a height three feet above the highest flood of record, according to a program which was more than three-fourths complete when the recent flood came. Where thirty years ago any flood of more than ordinary height broke many dikes and flooded many thousands of acres, so the possibilities of having to move out suddenly to higher ground were constantly in mind, conditions had been so improved by completion of higher levees that in the last great flood before the 1927 one, that of 1922, the levee system performed with really wonderful efficiency, and presented only two or three serious breaks in its entire line of more than 1,500 miles. Meanwhile, because of better levees the reclamation of swamp lands for agriculture proceeded rapidly and values per acre were vastly increased. Much of the recent distress is due to forgetfulness of the danger of flooding that has always hung over these reclaimed river bottom lands and probably always will continue.

Some few people are now in a hurry to condemn the levee system, where really it is entitled to abundant praise. There is a bright picture of the wonderfully successful protection by the levees in what happened during the great flood of 1922. The 1922



A THIN LINE

Flash boards for preventing waves from overtopping a low levee



Official Photograph, U. S. Army Air Corps

NEAR PENDLETON, ARKANSAS

Two-thirds of a million people lived in the areas flooded like this

flood rose within a foot or two of the height of the present flood, and in all of more than 1,500 miles of levees there were only two serious breaks, although there were several narrow escapes. The levees as they stood in 1922 protected more than nine-tenths of the land that was relying on them for protection. Considering a period of more than ten years, levees have protected everything except ten per cent of the land flooded in one year out of the ten. That figures out to be a "batting average" of ninety-nine per cent; which really is doing wonderfully well.

There is now a loud outcry "Complete the levees."

Completing a single line of levees along each shore to full height and thickness *can never fully protect the low lands behind them.*

The dangers that remain after levees have been built to full height and standard thickness, have been so largely overlooked, during the recent popular discussion, that it seems to me now important to devote some time to these particular dangers of deep undercutting, a case of which may occur almost anywhere without warning, and may overnight get beyond

control so as to inundate more than 1,000 square miles of most fertile land, and possibly cause a loss of more than ten million dollars from a large crevasse.

The chief weakness in this system of protection by levees and revetment lies in the ever-present danger that some new twist of deep current during a great flood will undercut some short piece a few feet in length in the more than 1,000 miles of river bank where there is no revetment; or that a stream of water will percolate somewhere beneath the high levee following a deep, hidden stratum of sand or gravel and burst up during the night in a "sand-boil," or that it may tear up the corner of an old revetment.

One or more crevasses through the best of these standard levees will be probable for many years to come in the high flood of each ten year period, with the further probability that once in, say fifty years, there will be a coincidence of large simultaneous floods on tributaries from wide-spread heavy rainfall, like that of a few months ago, which will result in the delivery of a flood carrying about as many cubic feet per second as that from which this region is now recovering.

The protection of levees against rupture from undercutting by the deep current, which is most active at the concave shore of the bends, is by a revetment, most commonly by means of a "mattress" composed of willow trees and twigs interwoven with steel cables, 200 feet in width, more or less; and extending for a few thousand feet up and downstream along the threatened bank. This mattress is placed on the river bed below the low water level and held in place by loading with stones. This work of mattress building is extremely costly, at present averaging about \$375,000 per mile of length. It necessarily proceeds slowly, both from the slow supply of funds, and from the limited supply of small willow trees, which are cut along the neighboring river banks and wooded islands.

The several construction plants have an aggregate capacity of fifteen or twenty miles per year, but from three to five miles per year is about all that the actual construction for the past ten or fifteen years has averaged, and out of a total shore line of more than 2,000 miles between St. Louis and New Orleans less than 140 miles has been effectively revetted.

The need of revetment obviously is greater near the water front of cities like New Orleans, Greenville, and so on, and particularly along the concave shore of the bends, but history shows that other parts of the shore are not wholly immune from danger. To protect the entire length of both banks of the main river only downstream from Cairo, at the recent rates of cost and progress, would cost upward of 500 million dollars, and take more than 200 years, and when once put down, revetment is not imperishable for all time, and in some rare cases the current has torn it up.

In the great flood of 1922, two serious crevasses occurred, one at Weecama on the west bank near the little town of Ferriday, the other on the east bank below New Orleans at Poydras, each of which I visited and carefully studied. Also, I visited and studied the scene of two near-crevasses: one on the east bank, near Tunica, about twenty miles below Memphis, the other on the west bank at the Stanton plantation five miles below

New Orleans. Each of these occurred at a place not previously regarded as particularly dangerous. At the Ferriday (or Weecama) crevasse the land was flooded apparently from three feet to five feet in depth upstream, downstream and inland, as far as one could see. Only tree tops and the tops of houses were visible in a widespread scene of devastation. Conditions were much the same at the Poydras crevasse, which occurred very near to the spot where the levee was cut in the present flood. At each of these crevasses at the time of my visit a current was tearing through with a volume nearly equal to that of the Niagara or St. Lawrence Rivers. Until one has seen such a crevasse, imagination fails to tell what a terrible affair it is. You cannot visualize from the still pictures in the papers the mile-wide river swirling and dashing through a slight earth dam.

The Mississippi at high floods carries two million cubic feet of water per second, or ten times as much as the ordinary flow of the St. Lawrence. This gives some measure of the size of a spillway, natural or artificial, that would be necessary to produce any important effect in lowering the flood. The vast volume through the crevasse cuts to 100 or perhaps 150 feet in depth near its mid-channel for a distance of several hundred feet along its current, and apart from the damage to the farming property inundated, this leaves an awful gap to be filled up when the levee is restored after the flood has subsided. These possibilities of a breach of the levee by some new freak of the current in under-cutting the banks at a point where danger is not obvious have been mostly ignored in the recent discussions of what is necessary for safeguarding these reclaimed delta and swamp lands. After levees shall have been built everywhere from above St. Louis below New Orleans to the full height and thickness prescribed by the Mississippi River Commission, one who dwells behind the levee on low ground should live always in view of the possibility of a break which may drive him out and drown his hogs and chickens, although it occurs forty miles upstream from where he lives. A break less than ten feet wide at the time

of discovery may within a few hours spread to cut out more than 1,000 feet in length of levee and it is then beyond all possibility of restraint.

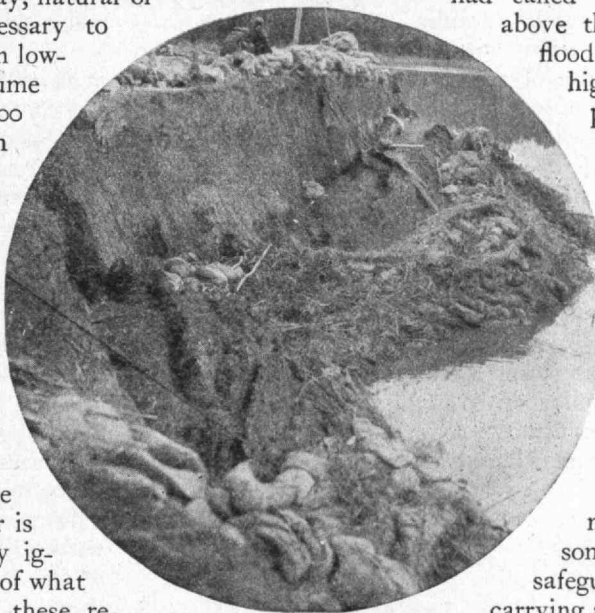
Picture a thin earth dam of very unstable material, built of whatever material can be scraped up close at hand, mostly river silt or damp mud, and 1,500 miles in length; for parts of its length resting upon a foundation of swamp mud at the site of old bayous or abandoned channels that may have left streaks of pervious gravel in their beds!

Super-structure and sub-structure must of necessity be vastly inferior to an earth dam such as is ordinarily built for reservoir purposes. One break in 100 miles in length once in forty years is within the reasonable probabilities for such a structure. I imagine that a count of all the separate breaches or crevasses along the main river in the recent great flood of 1927 might be found to give an average of hardly more than one break per 100 miles in the total length of levee.

The Mississippi River Commission's specifications had called for levees built to three feet above the level of the highest known flood. The recent flood having proved higher for long distances than any previously known, a new prescription doubtless will be written for dikes three feet higher than the new level, with a corresponding thickness, and whatever these higher and thicker dikes may cost, there is no question in my mind that they should be completed with all possible dispatch, as being the best safeguard yet developed; but while this work is going on, studies along many lines should be made for something better. As to obvious safeguards, the newspapers have been carrying a lot of amateur advice. Most of

it is utterly absurd to those who have a broad view of the conditions. The proposition that is frequently mentioned for storage reservoirs is perhaps the most absurd of all, and next in point of absurdity is that of restraint by reforestation.

This flood of 1927 originated from widespread heavy rainfall in the middle of the vast drainage area, not on the headwaters. A few figures will show there is no sufficient area of land anywhere that can be devoted



WATERS UNDER THE EARTH

Above: Close-up of levee bank showing sloughing caused by cutting-under. Note snakes of bags used for protection. Below: A sand-boil being examined by Mr. Freeman. The ring of bags is for the purpose of giving back pressure to reduce the velocity of the water



to reservoir purposes; as to reforestation, the land of the middle drainage area is worth far more to the country in farms than in forests. Spillways cannot possibly serve to reduce height of floods upstream from Natchez.

The first obvious immediate safeguard is for the inhabitants to live in expectation of an occasional break in the levees, and to maintain plenty of boats, as did the early settlers, and build mounds fifty or one hundred feet in diameter with their flat tops three feet above maximum flood height, at frequent intervals along the highways and crossroads, say not more than a mile apart, to which families can retreat and live stock be driven as the first stage of emergency relief.*

III

One of the greatest safeguards would be to resume a painstaking study of the physics and hydraulics of the Mississippi under the best talent available, by means of several hydraulic laboratories worked in conjunction with a constant and thorough field study of the river itself.

In spite of all that a single line of standard levees can do, unless certain remote possibilities which I will mention later can be brought about, I repeat, the people on the bottom lands of the Mississippi for a hundred years to come, should live in anticipation of a repetition of inundation, in view of the lay of the land and the possibilities of widespread heavy rainfall and the dangers of under-cutting and crevasses. On the theory of probabilities, once or twice in every half-century they are liable to a repetition of last spring's disaster, if reliance is placed on a single line of levees. Even if levees are three feet high beyond the utmost flood, there remains the liability of this river gnawing at the banks deep down at the foot of the levee at some unseen,



Official Photograph, U. S. Army Air Corps

GREENVILLE, MISSISSIPPI

An Indian Mound, a haven for refugees, surrounded by the flood waters. The local paper was published throughout the flood period

unsuspected spot as at Weecama or Poydras or Stanton in 1922. The present method of building levees is simply that of scooping up so much near-by silt and sand and dumping it in a bank, so as to fit the outlines of the standard cross-section and letting it settle mostly under its own weight, all at the lowest possible price per yard.

I found a vast difference in permeability during high floods of continuous stretches of levee. Some say those built in the old way with mules and ox carts were the most impervious because of compacting in this process. This suggests a more scientific study, and much variation here and there in a series of standard cross-sections to fit methods of building, quality of material and conditions of soft or pervious substrata. The most difficult question of all is that of protecting the foot of the bank at a depth of fifty or one hundred feet vertically below the flood level, so it will not be scoured out in at least one spot in a hundred miles. This liability will exist along many miles of levee, until they can get the edges of the banks of this crooked river revetted for its entire length, and when revetted, failure, or near failure has sometimes come.



Official Photograph, U. S. Army Air Corps

DERMOTT, ARKANSAS

"The greatest peace-time calamity in the history of our country," said Herbert Hoover of the Mississippi Flood on May 29, at New Orleans

* For the future, notwithstanding its vast cost, the most obviously efficient safeguard would be a system of secondary dikes say half a mile back from the present main dikes or levees, and nearly parallel thereto, with occasional cross connecting dikes of full height built in order to prevent the starting of a new river channel between the two lines of dikes, if a break occurs. This arrangement has been carried out along some parts of the River Po in Italy. The first step toward this, or any other comprehensive scheme, should be a survey and careful reckoning of the cost in relation to the values to be protected. Also there should be storehouses at intervals of say five miles each containing tens of thousands of grain sacks, treated chemically to withstand vermin and decay, ready to be rushed to a point of danger and filled with sand.



Official Photograph, U. S. Army Air Corps

NEAR SOUTH BEND, ARKANSAS

Four hundred lives lost, seven hundred thousand persons made homeless, thirteen million acres engulfed, and three hundred million dollars' worth of destruction!

Revetting the foot of caving banks on the concave shore is not enough. The crevasses of 1922 at Weecama and Poydras, and the near-crevasses at Tunica, Stanton, and so on, were not on concave shores, but were on places which looked relatively safe.

To illustrate the need of some change in methods, we may note that revetting the foot of the river banks continued at the average rate of the last twenty years would take about two hundred years more to finish the job. Revetment of one shore costs about \$375,000 per mile and to complete the whole length would cost perhaps five hundred million dollars, to say nothing of maintenance. Willows of which to make the revetments do not grow fast enough on the banks and islands to permit very greatly hurrying completion. The Army engineers have been using concrete slab revetment and successfully trying various expedients in hastening the work. Up to the present time, in the past thirty or forty years, a total of only about 140 miles out of the 1,500 has been completed. Therefore, conditions of cost and progress lead me to call attention to the less costly system of double dikes and to possibilities of new methods of control, which may be developed through more scientific study.

I look upon this problem of protection of the foot of the bank against being cut out and then rapidly sloughing off in sections, carrying levee and all with it, as the most difficult of all, and one that *needs much scientific study as to cause of the whirlpools* that may do this cutting.

Probably this undercutting is not the result of simple erosion by a straight-forward current. These whirlpools in the river doubtless can be simulated and studied in a properly designed hydraulic laboratory. On the river they work

beyond observation under a vast depth of muddy water. The vertical depth of water at the foot of a bank near the peak of the flood may be more than 100 feet. Some freak of nature or perhaps an old water logged sunken tree or snag may start an eddy or swift current gnawing at the foot of the bank. The erosive vortex may be the result of larger eddies impinging one on another, causing an intensified velocity and force such as that produced in the air in a cyclone or a Kansas "twister." This vicious current may cut fast and deep on a small area — perhaps only a spot 100 feet in diameter. Pains-taking scientific study of such conditions is greatly needed. I cannot find evidence in technical publications, or in conversation, that the Army engineers have done very much in studying the hydrodynamics of this or other rivers. Whenever I have suggested the value of a hydraulic laboratory for such researches to any of my friends in this corps, I have failed in getting the idea of modern laboratory methods home. A laboratory is a place in which to

separate out the elements that go into these problems and *study the effect of each element without confusion of causes*, by going along with observation on the river and experiments in the laboratory hand in hand.

This is not a problem of building a little miniature Mississippi River two or three feet wide, with the expectation that it will perform just as the big river performs. It is a matter of first studying the laws of transportation of sand and gravel along a river bed and long continued study in laboratory and field, in order to show how the river could be straightened and its flood plain lowered so that for much of the way no levees would be needed.

The precise method of the forming of cross-over bars, of conditions under which a channel can be cut



Official Photograph, U. S. Army Air Corps

IN ARKANSAS

"Men saw marvels of engineering topple like toothpick fortresses" — "There is something sinister about the Mississippi; it almost seems alive. . ."

and maintained through them by the current, and of studying the generation of erosive vortices by impact of currents; also of studying the precipitation of sediments from fresh water by admixture of salt water; the movement of "sand-waves"; the laws of transportation of gravel bars slowly downstream, all should be studied.

Meanwhile an intensive, widespread geologic survey should be one of the lines of research. When my classmate, Professor William O. Crosby, former head of the Department of Geology at M. I. T., was helping me study conditions prior to building the dam at Keokuk, he told me that back in geological times, when the continental ice cap was melting, the Mississippi was a far more majestic stream than it is today, probably ten or twenty times as large, and perhaps carrying a hundred times the volume that it now averages through the year. The river then filled the broad area between the bluffs which you now see commonly three to five miles apart above St. Louis. The bottom land has been deposited within what was once the bed of the river, down as far as Cairo. At times the tributaries doubtless brought a different kind of sediment than that which comes down in the mud of the Missouri River today. In many localities there is more or less coarse gravel scattered through the strata of these alluvial deposits.

Borings in the ancient preglacial channel a few miles west of Keokuk show a rock bed more than 200 feet below the present surface. The present river flows in a refilled bed probably more than 200 feet deep to bed rock near Cairo, and possibly a thousand feet at New Orleans and Natchez. These alluvial deposits with which the ancient bed has been largely refilled are soft and easily eroded, the average grain size being less than 1/100 inch, but with a sprinkling of coarser material and gravel mixed in.

Some curious facts have been observed that appear to result from this mixture of coarse and fine materials. The river at a given locality is sometimes found from one foot to five feet higher after a flood than before the flood, with precisely the same quantity in cubic feet per second flowing in both cases. The explanation is that one of the first acts of a great flood is to restrain itself by rolling up gravel and building a series of low dams across the bed of the river. (The pilots call them "cross-over-bars"). There is likely to be one of these bars at every point of contraflexure where the river turns from a right hand to a left hand bend. The erosion, transportation, and deposit that finally results in these

obstructing bars is explained by the river in flood being wider and larger and slower in flood-cross-section at the points of change of curvature than within its course through the bends, while at low stages of water the velocity is smallest in the deeper, narrower pools through the bend.

After having followed the literature pretty carefully I believe that the really intimate hydraulics of many of the important phenomena along the Mississippi and Missouri Rivers have never yet been studied.

I am tempted here to mention an idea that I have carried in the back of my head a long time, that is, that perhaps the river can be straightened in many places; that it can be made to do its own straightening and to carry its own burden of sediment to the sea. The drift of this line of thought can be made clear if you understand that at St. Louis the river surface is 380 feet above the Gulf, and that the aggregate river is more than fifty per cent longer than a straight line between the points. In other words, if you could take out the curves and the extra length you would have about 200 feet in head to spare, by which the river can be lowered. In other words, if the Mississippi flowed in a straight line, and if you could find a way to hold its banks after you had once straightened them, then the straightened river at its extreme flood stage for all of the distance above Vicksburg would be entirely below the level of these bottom lands. This idea is anathema to the engineers engaged on the Mississippi control with whom I have talked, and I desire to make clear that it is at the present time merely an iridescent dream, perhaps with a chance of one in ten, or maybe only of one in a hundred, that the dream could be made to come true. What its realization might mean, is worth thinking about, and suggests one of the many lines of research that a first class hydraulic laboratory would permit.

I am inclined to believe that ten years of good earnest experimenting and observation, with work in the laboratory and the work in the field going hand in hand, that one could make vast additions to present knowledge about many of the important problems of how best to control the floods of the Mississippi, and how best to fit it for greater navigation between St. Louis and Vicksburg.

I hope that some day we may have at the Institute a laboratory in which young engineers can be trained to study river problems of this kind wherever they may go forth and find them, anywhere in the wide world.



Undergraduate Affairs

Field Day: A Background

AN EDICT from President Samuel W. Stratton and a share of the cloudburst which flooded Vermont, effectively moistened the enthusiasm of any who would have attempted a celebration on the Cambridge streets this Field Day Eve. Last year, it will be remembered, the freshmen broke up a sophomore meeting, and, after the fighting spirit had spent itself, the two groups joined in a snake dance to Harvard Square, rode in the subway to Boston, and paraded back to the Institute. Requests of the Dean's office and the President of the Institute Committee notwithstanding, an attempt was made to parade into Boston over the Harvard Bridge after the Field Day exercises were over. All of these happenings were independently investigated by a committee of students for the Institute Committee and the President's Committee of Faculty and Alumni. Both arrived at one conclusion — among others — that similar affairs should not happen again.

Another committee of Faculty, Alumni, and students then set about to discover the psychological and physiological causes behind the outbreak. It came a cropper in this direction because the committee could not agree upon a final hypothesis, some holding that the affair was only an outburst of "pent-up animal energy"; others that it was plain cussedness. Apparently the exponents of the cussedness hypothesis won a moral victory for the committee prescribed a legal remedy, recommending (1) that there be no demonstrations off the Institute grounds, (2) that there be no class assemblages immediately preceding or immediately following the official events of Field Day. The Institute Committee, a purely legislative body, accordingly requested

President Stratton to discipline any students who caused trouble. He acceded to the request and notified the parents and guardians of all first and second year men that their wards would be liable to expulsion if they should run afoul the police in connection with any Field Day misdemeanors. This ukase and the rain coöperated to leave undisturbed the repose of both newspapermen and the metropolitan police.



The Tech

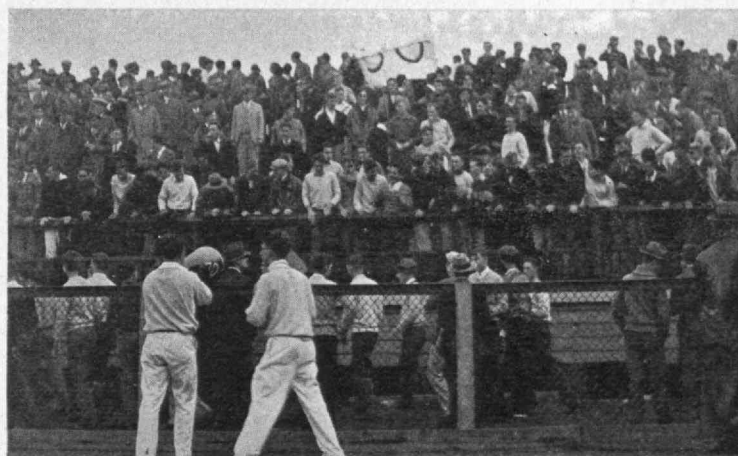
THE ROYAL BOX

From this vantage point Col. H. E. Cloke, Assistant Dean H. E. Lobdell, '17, Bursar Horace S. Ford, and President Samuel W. Stratton viewed Field Day

Field Day: In 1927

Field Day got under way this year with the usual brigandage when, two days before, freshmen and juniors took from his bodyguard, D. Tullis Houston, President of the sophomore class. He was carried to Andover and securely bound to insure his absence from the sophomore mass meeting that evening. But Tull had a knife, like the hero in a Bill Hart movie. With it, he released himself and was back at Technology with the speed of unchained lightning. Other attempts of the freshmen to break up the meeting were only partially successful. They locked the doors after the meeting was well under way, and thus unwittingly and incidentally prevented Dr. Davis R. Dewey, Head of the Department of Economics and Statistics, from leaving for his home. Authorities on the undergraduate law, with customary legal side-stepping, refused either to smile or to frown upon the practice of kidnapping. When approached by telephone for a ruling, senior President Ralph T. Joep quoted the law and slammed the receiver without further comment.

Friday afternoon came, damp and cold and threatening. Promptly on the stroke of 1:30, the new R.O.T.C. band tooted its first offi-



The Tech

SOPHOMORES

The victorious Class of 1930 occupied the northerly stands. The photograph was taken immediately after a minor raid by '31



Courtesy The Tech

GLOVE FIGHT

They battle for gloves under the watchful eyes of the marshals

cial toot and paraded to the stands on Tech Field. Behind it straggled '30 and '31, looking for all the world like Coxey's Army. Soon the stands filled up: freshmen on the south, sophomores on the north, the band and the guests in between. President Stratton was ushered to his enclosure, a royal box especially designed by Major Albert S. Smith. There he was later joined by his guests.

The routine athletic events of the afternoon had scarcely begun when a group of freshmen ran a line of fire hose over the roof of the track house toward the sophomore stands, in full view of General Jope and his aides. The firemen became excited, peered into the nozzle, made frenzied motions urging their friends to "turn it on." Willard J. Slagle, '28, the chief consulting engineer for Field Day, fully aware of his important position, continued to lean against the fence. "Let them go," quoth he, "the water is turned off and locked." And that was that. It occasioned surprise, therefore, when later in the afternoon the freshmen were driven from their places by water from the same hose, manned this time by sophomores. Someone had found a key, fitting either the hydrant itself or the heart of a marshal.

The Class of 1931 took all honors for advertising campaigns. Its numerals appeared on the roof of the rifle range, of Walker Memorial, and of the hangar, and they were dangled from a kite over the crowd. It lost its mascot, however, when sophomores became suspicious of a Cambridge-bound donkey that was being guided across the Harvard Bridge by a chap with a freshmen necktie. Neither the donkey nor the driver reached Tech Field that afternoon. The only other gesture made by the sophomores was when they knocked down one of their number dressed in the freshman football uniform, and hauled away the remains in a concrete-handlers' push cart.

A final counting of points gave the day to the Class of 1930 by a score of 8 to 5. They had taken the crew race, the tug of war, and the relay race; only the football game reverted to the freshmen, 6-0. The loser, however, found some solace in the glove fight and although that event carried with it no points, the freshmen went into it with a vigor made more intense by the desire for revenge.

Field Day: The Glove Fight

Late last spring when the Class of 1928 took over the Institute Committee, Ralph T. Jope became its leader. He and his political supporters, constituting the Jopesonian Democracy,* felt strongly that the new restrictions upon Field Day interfered with the inalienable right of the average citizen legally to maul his neighbor and straightway they set about restoring rights to the common people. From a college in northern Ohio was imported the nucleus of a new game that was at one fell swoop to provide for the release of animal energy at a safe rate, furnish amusement for the on-lookers, and inject a new spirit into a Field Day that was beginning to show signs of collapsing after so many legislative operations upon its vital parts.

At the close of the football game, both freshmen and sophomores marched on to the field, each man receiving a cotton glove — the sophomores, red right ones; the freshmen, white left ones. Lefts or rights, it made no difference, except to the expense account of the committee in charge. Under each pair of goal posts reposed a barrel under guard of a marshal and in front of it the contestants lined up, ready for the starting gun. It barked and each man dived for an opponent and attempted to remove his glove while retaining possession of his own. If he were lucky or skillful enough to seize a glove, he would take it to one of the barrels and deposit it there.

* So called because of the analogy between it and the administration of President Andrew Jackson. See The Review for November, 1927.



Courtesy The Tech

MORE GLOVE FIGHT

All the advantages and comforts of a cane rush with none of the disadvantages

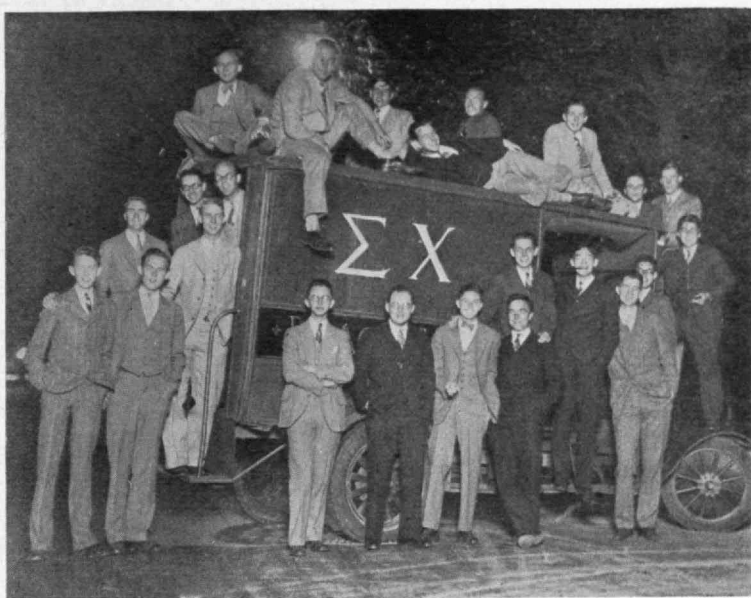
Twelve minutes later, time was called and the class collecting the most gloves was adjudged the winner. Counting proved to be impracticable, for who was to decide whether a thumb should count as a finger and whether a glove is a glove when the wristlet is missing? It was finally settled on a volume basis, backed by the marshal's observation that not a solitary sophomore glove was in evidence when time was called. The glove fight was assuredly a success and a triumph for the Jopesonian Democracy.

Catechism: The Cellar Cabinet

(The Review presents this series of questions and answers with the expectation that they will prove to be enlightening to Alumni and parents interested in undergraduate life, and that they will be of direct use to the correspondents of *The Tech*. It is further believed that patriotic fraternities will find them serviceable as memory exercises for their freshmen delegations.)

Q. The Executive Committee of the Institute Committee, what is it? A. It is the cerebrum, cerebellum and medulla oblongata of the Institute Committee. If that be treason, make the most of it, but the fact remains that as the Executive Committee thinks, so shall the Institute Committee think. It is only on trivial matters that the two bodies disagree.

Q. How does it come into existence? A. This answer is to be discovered in that great document of undergraduate liberty, the constitution of the Massachusetts Institute of Technology Undergraduate Association. In Article V, Section I, it is writ that the officers of the Institute Committee plus the Chairman of the Walker Memorial Committee, plus a member-at-large shall constitute the Executive Committee, and in Article IV, Section I of the By-laws, it is writ that these members shall be elected by a secret ballot of the Institute Com-



THE SIGMA CHI MACHINE

Some fraternities have their steam rollers, but Sigma Chi has its Black Maria

mittee. Thus it is seen that, however domineering it may later become, this committee originally derives its just power from the consent of the governed.

Q. The Executive Committee, what does it do? A. As suggested before, it is, as it were, a delicate "product integrator" or thinking machine designed to solve legislative problems. It is, in general, safe to say that it does solve them. The glove fight idea was concocted by this committee, and last year the Executive Committee, plus two judges-at-large, conducted the memorable Field Day Investigation. This body specializes on riot problems.

Q. Who are the present members? A. Ralph T. Jope, President of the Senior Class and the Institute Committee, and *ipso facto* leader of the Jopesonian Democrats; Homer A. Burnell, of Cambridge, the Andy Mellon of the administration (it would hardly be fair to call him the Biddle of the Jopesonians); Henry B. Dean, of Cambridge, Va., leader of the Whigs; Elisha Gray, Corning, N. Y., Secretary of State; Frederic D. Riley, Jr., Quincy, Lord High Steward, Janitor, and Dishwasher (Chairman, Walker Memorial Committee); Thomas S. Wood, Jr., Salem, N. J., Grand Historian (General Manager of *Technique*). Burnell, Dean, and Gray are commonly grouped together as "three of the four horsemen," a supposedly powerful social and political clique.

Q. Whence came this nickname — "Cellar Cabinet"? A. From the sweat-box in the basement of Walker Memorial where the Executive Committee convenes.

Q. Is this year's Committee as efficient as that of last year? A. Ask Major Smith, Superintendent of Buildings and Power, or Eddie Pung, official Technology's satrap in Walker Memorial.



THE CELLAR CABINET

The Institute Committee's Executive Committee is properly dubbed "the cellar cabinet"

News from the Classes

The Secretary of 1901

HENRY JAMES said of Stevenson that "he fairly challenges portraiture . . . the effort to fix a face and figure." Possessing only a moth-eaten shaving brush and a palette of rather lifeless colors we have with unjustified boldness set out to "do" a secretarial personality that has a Stevensonian challenge—but, we hasten to add, not a Stevensonian manner, except a common relation to seafaring folk.

For it was seafaring forbears and expository discussions of national politics by his elders instead of Mother Goose that stimulated a natural taste for the racy old Anglo-Saxon interjections which intrude into the charmingly sophisticated, though usually partisan conversation of the urbane Secretary of 1901.

A man of diverse interests, he reflects the chemical engineering he learned at Technology, the philosophy he garnered at Göttingen, the sartorial magnificence of Pall Mall, the endocrines and thyroids of his vocation as Chief of Research Service of the Evans Memorial Hospital, and Professor of Chemistry at the Boston University Medical School. But chiefly to a Technology audience is he known for his avocation rather than his vocation, for this avocation is the Institute and in particular her athletics.

Of all his secretarial colleagues, Dr. Allan Winter Rowe is the busiest, the most tireless, the most efficient. So averse to inaction is the Doctor that once in an uncautious moment when Technology affairs were somewhat slack, he seriously took up philately (adding it to a previously well-ridden hobby for

pewter mugs, a passion for books on crime, and a taste for Virginia cigarettes) to occupy his time between 3 A.M. and bed time. And this although in point of actual fact he had never known an inactive waking moment since the twenty-four hours following the cataclysm when, after an argument with an elevator in a Back Bay hotel, he came off semiconscious and slightly bent, the elevator being nearly wrecked. That was *circa* 1914.

In all his labors Dr. Rowe has been, and still is, frank, often brutally and always eloquently, as certain would-be undergraduate politicians of the M. I. T. A. A. well know, but with all this frankness there exists an uncommon fairness, a vestigial remnant, so it seems these days, of uncompromising Puritanism. On account of this fairness and because, however partisan in conversation, he is primarily a seeker after justice, a stubborn

Diogenes with a mental x-ray for a lamp, he is frequently the choice for those "delicate situations" where the appointee cannot possibly be, simply must be, and usually isn't, impartial.

But as the *bête noir* of the "semi-pro," the "non-competing amateur" and, in general, of the athletic counterpart of the Congressman who votes dry and drinks wet, he is known up and down the country. "You are either an amateur or a professional and THAT'S THAT," has punctured more than one polite euphemism and been the deciding factor in upsetting many supposedly well-ballasted apple carts. Herein may lie the answer to his membership on the American Olympic Committee.

With all Dr. Rowe's good points (and he has more than most individuals who are actively trying to accomplish something) it is perhaps a bit petty to record an unpleasantry. But the fact remains that

there is getting to be a wee bit more truth than poetry in what the Doctor often declares, in a spirit of spontaneous levity, has come to pass, for it seems that "senility is setting in." A summer ago we could not have been so sure for then the authorities of a neighboring Commonwealth mistook him for a mere stripling of but a score and ten and libeled him as a noted singer in the bargain. In point of actual age his years are, even at this writing, but forty-eight. But now we have from unimpeachable authority specific evidence that senility in the form of color-blindness has set in. ■

Nevertheless, The Review Editors are confident that the Doctor still knows his hormones even though he may be twisted on his reds and blues.



OF SEAFARING FORBEARS

Dr. Allan Winter Rowe, '01, officiates as timer at a race on Tech Field. The sartorial magnificence of Pall Mall is clearly evident

Index Expurgatoris

All members of the Class of 1916 and others who move and leave much ash and no doorbell batteries should read the letter from Mrs. E. Burton in the Class of 1921 notes. — We admired the cadenced prose of Mr. Warren's 1875 notes, and he has got a serene charm into them that little writing ever has in the Class Note section.

The Poland that Fred Clapp met in Persia (1901 notes) is William B. Poland, '90, in December, 1915, Director in charge of relief work in occupied territories of Belgium and Northern France; in July, 1916, made director of the Commission for Relief in Belgium with headquarters in London. Previously he

was general manager and chief engineer of the Alaskan Central Railway and sometime Vice-President and chief engineer of the Philippine Railway Company.

Essaying the Rowesque, the Class of 1922 reappears this issue. — The grandfather competition moves apace in 1897. — The General Secretary of 1926 has abdicated his high place in favor of "*der Konvergenzpunkt*," a kind of Televox or Robot that can subsist on Course Notes supplemented now and then by pretzels and beer. — The 1887 notes of Edward G. Thomas are particularly interesting this month.

In this issue are reported two births each in 1911, 1922 and 1925, and one each in the following classes:

1917, 1921, 1923, 1924. The following deaths are reported: Class of 1875 — King, Frank T., August 5, 1927; and Temple, Arthur W., October, 1927; Class of 1877 — Wilson, John Appleton, April 17, 1927; Class of 1881 — Stephenson, Charles H., March, 1927; Class of 1884 — Jarvis, George T., no date given; Class of 1887 — Adams, Harry S., August 21, 1927; Class of 1893 — Keith, Simeon C., June 6, 1927; Class of 1895 — Crafts, Walter N., June 8, 1927; Class of 1896 — Hubbard, Frank, February 23, 1927; Class of 1899 — Emerson, G. Dana, no date given; Class of 1921 — Longfellow, Charles Jr., November, 1926. Summary: Ten births and eleven deaths.

'75 The Secretary's lot would be more of a bed of roses if letters were answered. Other secretaries confide that these shortcomings are duplicated by their classes, hence my being new to this delectable office cannot be altogether the cause. Maybe, after a half century plus three years come June, the '75 ancients have reason to be neglectful. We are of the few still living who link ourselves with the era when conditions of life were vastly different from anything the students of today know. This was driven home to me at the Hartford and New Haven Technology Clubs summer get-together, where I was the oldest alumnus among sixty-eight good fellows. These memorable outings at Old Lyme, on Long Island Sound, have been an annual event for more than twenty years, which forcefully brings to mind the lack of Technology fellowship in the Seventies. May the good work continue and the men of each class have a heart, as the Secretary you have honored thus cannot function as you wish unless each man does his bit.

There are exceptions to every rule and I have encountered happy reminders in renewing contacts with men I had not seen since 1875. At New Haven I had a never-to-be-forgotten visit, in the rain, with Pierce. He kept remarking, "Warren, you must not hold me responsible for this devilish weather. Great Moses! What a welcome after our not meeting for fifty-two years!" He drummed it in what a fine Class Secretary Ed Hammatt had been and that his successor would have to bestir himself to equal his efficiency. Pierce was our first class-historian. In 1909 he helped out the Union and New Haven Trust Company for two weeks, then becoming a member of the staff, where he is head of the Safe Deposit Department.

In New York, going to southern New Jersey and returning, I held forth at the Technology Club, 17 Gramercy Park, for several days, where I was the patriarch emeritus among active men in the forefront of changing standards and habits. Hereby hangs a tale of those who know not the days before

the telephone, difficult for me to realize. Manager Spalding is a dear uncle to the members of the happy family there assembled.

Webster put me up at the Philadelphia Art Club where we exchanged reminiscences on our years at Rogers Building, the Boston fire, and such. Our paths had not crossed since graduation and neither would have known the other on the street. This topsyturvy old world has been kind to him and he has small cause to worry. He passed the summer at Poland Springs, and a recent letter says, "We are soon to leave for Southern California for the winter."

When I was in Philadelphia, Wilfred Lewis and his wife were in Rome. He was a delegate representing the Taylor Society, to the Third International Congress of Scientific Management, under the auspices of the King of Italy, with Benito Mussolini as President, as was told in the November Review. Up to November 1 as these notes are written, he had not made known his return from Europe.

The last week in September, at the Lake Placid Club in the Adirondacks, is the annual powwow of librarians which I was urged to attend, happy to report. Old friendships were renewed and I had wonderful motoring and revelled in the brilliant panorama of the changing foliage. Hearing of a prominent Technology member of the Club, I lost no time in hunting him out only to find that he is an alumnus of the Rensselaer Polytechnic Institute of Troy, which he told me was the first college of science and engineering established in any English-speaking country. In northern New York, Tech or Technology never has reference to the Massachusetts Institute of Technology and also this is generally true in Pennsylvania. Our Alma Mater is unfortunate in not having a readily distinctive name. On the Pacific Coast it is quite generally spoken of as Boston Tech, which, anyhow, properly locates it.

I must not overlook dropping in on Prentiss at Holyoke. We had exchanged letters and he was advised of my coming. To my

amazement he knew me at once, though we had not met in long years. He explained that the evening before he and Mrs. Prentiss had conned the 1875 Class Album and looked up my photographs, saying, "You have not changed much!", which is drawing it mild, thank you. It was a perfect day in keeping with our get-together and the ride to Greenfield by way of Mount Holyoke campus and Amherst. The Prentiss Wire Works were established in Holyoke by his father in 1857 and the son continued as the head until yesterday, and now the founder's grandson, George William Prentiss, 2d, '05, is the successor.

On October 24, Goodale took the train for Butte and Great Falls, Mont., where he is assured an old-time welcome. He planned to return to Boston for Thanksgiving. — My letter to Wilson brought a reply from his daughter telling of her father's death on April 17. He was a special in architecture with our Class for one year, and also with '77. He followed his profession in Baltimore and had retired in 1925.

King died on August 5 at his home in Brooklyn. We both took Course III, and he frequently came to my home. In after years he lost interest in the Class and the Institute and would not reply to letters. "He was a trustee of Trinity Church and a member of the Sons of the Revolution and Church Club," so reads the notice that was sent me. — As these notes go to the printer, I learn of the death of Temple at his home in Reading, Mass., in mid-October. He would have been seventy-three this December. Although he was with the Class only the first years he retained interest in Technology and I well remember him.

It is suggested that the next annual meeting and dinner of the Class be held the same week as the annual Alumni Dinner, which will probably be on January 14. The hope is that all who can will make an effort to attend, Bear it in mind. Also make note of the following change of my address. — HENRY L. J. WARREN, Secretary, 34 Franklin Street, Greenfield, Mass.

'81 Tom Barnes writes under date of September 3 from Lima, Peru: "We had a Technology Reunion here on August 31.

Alberto Romaña, '11, David Rasso, '12, and myself got about a lunch table and drank a toast to 'Dear Old Tech.' These boys here are great rooters for their Alma Mater. I find them the same in Cuba, Guatemala and on down to here which is my farthest South.

"Thanks to Dr. MacCorneck, wizard of the knife and surgical technique in the Methodist Missionary Hospital here, I am now in prime condition and going strong to solve the Port problem in the Callao and Rimac Valley, where Lima is situated, instead of being a victim of a tropical liver abscess. All hail to the enterprises, whether church or commercial companies, which appreciate the importance of hospitals! I had the pleasure of greeting Professor Hutchinson (Daddy Richard's successor), who was here this summer on a vanadium investigation."

News comes that Charles H. Stephenson died in March, 1927. He was about sixty-four years of age. He was married in 1896 and had three children. He was in the School of Mechanic Arts from 1879 to 1881. After graduation he was at Providence with the Brown and Sharpe Company for two years and then was four years as an instructor at Technology. From 1887 to 1899 he was with the General Electric Company and Thomson Electric Welding Company, at Lynn. In 1900 he established himself as a manufacturer of household specialties in Lynn, and continued this business until his death. He was well known to the Class from his attendance at the various reunions and dinners which we have had, as he was always an enthusiastic adherent. —FRANK H. BRIGGS, *Secretary*, 390 Commonwealth Avenue, Boston, Mass.

'84 T. W. Robinson, Vice-President of the Illinois Steel Company, gave an important address before the Iron and

Steel Institute at its September meeting in Glasgow on the Economic and Social Development of the American Iron and Steel Industry, summarizing his conclusions as follows: "The economic progress or retrogression of any nation depends upon the expansion or curtailment of the individual production of its workers, and the secret of America's well-being lies in its unrivaled per capita output. At the back of all accomplishment, however, is human effort, and the installation of power and the wealth of material resource will be but abortive aids unless utilized and directed by the hand of able and willing labor. The character of any people depends upon their education and environment, and their material welfare can only be assured if founded upon sound economic methods. The irrevocable law of supply and demand is nothing but human nature reduced to a formula, and composite human nature is unchangeable in its primary instincts in spite of civilization's veneer. Consumption is vitally affected by costs of production, but for management to lower costs by reducing wages if they are reasonable is just as shortsighted as for labor to try to improve its condition by restricting its output. Both, if continued, must inevitably lead to lower standards of

living. High wages and high dividends can only come from high production, and high production will be better assured if labor is not only paid to produce but also is paid by what they produce. Tonnage rates, piece work, and bonuses for favorable performance spell high earnings when justly formulated, and American production owes much to this enlightened method of labor remuneration. Prosperity to continue must be based upon a thriving public, contented labor, and adequately remunerated capital. If any one of this essential trinity becomes unbalanced, the wheels of industry will slow down and prosperity disappear. As a prophet may not be without honor, save in his own country, the author ventures the prediction that as war has given way to peace, so will ignorance give way to economic enlightenment, and that in the new spirit of industrial cooperation there will be found both greater prosperity and a better understanding between the nations of the earth."

George T. Jarvis, Vice-President of the Rutland Railroad, died at his home in Rutland, Vt., recently. Jarvis was born in New York in August, 1859. He is survived by Mrs. Jarvis. After a special course at the Institute in civil engineering, he was in the service successively of the Pennsylvania; the Mexican Central; the Duluth, South Shore, and Atlantic; the Baltimore and Ohio; and the Lake Erie and Western Railroads. In 1896 he became receiver and general manager of the Louisville, Evansville, and St. Louis Road, and in 1902, general manager of the Rutland, where he has since been closely associated with George Leroy French, '84. —HARRY W. TYLER, *Secretary*, Room 2-261, M. I. T., Cambridge, Mass.

'87 The Fortieth Anniversary of '87 was celebrated at Drabington Lodge, Weston, Mass., on June 11, 12 and 13.

The Lodge, a conveniently arranged summer hotel, served as our headquarters to which we returned each night for a convivial dinner and sleep. The original ideas and untiring efforts of Taintor and Draper provided entertainment for each moment, sustenance and good spirits galore, and the weather man blessed us with perfect days. Considering the forty years of business life we have endured and enjoyed, we can point with pride to the attendance of thirty-five men young enough to play, both mentally and physically. The list of men who came includes: from Philadelphia, Safford; from Denver, Shepard and his son David, M. I. T. '26; from Chicago, Sturgis, Shortall, Schmidt, Green; from Williamsburg, Mich., Granger Whitney; from Toledo, E. G. Thomas; from Ann Arbor, Patterson; from New York, Barton, Cooley, H. E. Smith; from local points, Merrill, Curtiss, Veny, Cameron, Draper, Taintor, Jones, Mulliken, W. R. Thomas, Cole, Brett, Bryant, Lane, Sears, Goss, W. H. Brainerd, A. L. Cushing, Richardson, Proctor, and Carter.

On Saturday the golfers put in some practice over the easy fairway and difficult greens of the course at Drabington Lodge, and the call to dinner showed no one afraid of increasing his girth or adding to the acid in his system nor afraid of looking a bottle of Scotch in the face. Of course we played Blue

Dog in the evening, Cooley making expenses.

Sunday was spent in an auto ride through the North Shore towns to our regular Chebacco Island clam bake, the pinnacle of all things gastronomic, provided and managed by that prince of entertainers, Jules Cameron, the man who has a personal acquaintance with all the clams and lobsters which frequent the Essex River.

In the evening we met in business session. While '87 has not for some time elected a President for the somewhat perfunctory duties of our infrequent gatherings, it was felt desirable that the Class should have a titular head and that no one was so worthy of the office as Giles Taintor, to whose painstaking efforts have been due all the success of our recent activities, and he was unanimously chosen to this office of President of the Class of '87. The Treasurer then made the cheerful report that the reunion had been most generously financed by voluntary contributions and that we have a husky balance. Very was appointed Assistant Class Secretary, with the special duty of providing a good grist of Class News for The Review. The trustees of the Class Fund stated that they are providing substantial assistance from the Fund to one of our Class who, through long illness, is in straitened circumstances. Goss and Hussey, who had been previously appointed a committee to assist the Institute Dormitory Committee, were asked to continue their duties.

Monday we rode to the Framingham Golf Club, where Shortall, Green, Draper, Hussey, Goss, Jones, Brett, Bryant, Barton, Brainerd, Proctor, Patterson and E. G. Thomas chopped their way over the rocky hills and rolling greens of this interesting course. When the dust had cleared away, it was found that Proctor had distanced the field with a nine hole record of 45, with Goss leading the also rans with a 51. They were later awarded worthy loving cups as our premier golfers. From the Golf Club we drove to Draper's home at Milford, where a refreshing and substantial collation was served. Our final dinner, Monday evening, was one of reminiscence, for there were read — by their authors if present — the odes, poems, history and statistics of our Class Day program, and our growing collection of lantern slides was shown, giving a review of our activities of the past and bringing again to memory the faces of many who are now not with us. Here's to those who have gone and to those who will come together again five years hence.

Our ranks have been further thinned by the death of Harry S. Adams, at his home in Arlington, Mass., on August 21. He had not been in good health for some time and had not been able to stand the exertion of a visit to his office in Boston. He was graduated with us from the Department of Civil Engineering and promptly entered into the practice of his profession. He soon specialized in the handling of sub-aqueous structures, wharves and foundations, and supervised important work along the New England water front from New Bedford as far north as St. Johns, N. B. Among his clients were many of the largest companies having water front interests, especially in Boston and Portland. He was a member of the American Society of Civil Engineers, the Boston Society of Civil En-

1887 Continued

gineers, and the Boston Chamber of Commerce, and was identified with the First Unitarian Church of Arlington.

The Arlington Advocate says in part: "Mr. Adams was born in East Cambridge on March 16, 1864, the son of Charles Sylvester and Christiana Wyman (Jennison) Adams. His grandfather, Captain Charles J. Adams, years ago was keeper of the House of Correction in East Cambridge. In this, the town of his adoption, Mr. Adams gave invaluable service, especially on the Board of Public Works. He was elected a member of the board in March, 1912, and resigned in January, 1918. He served as chairman of this important board from March, 1915, until October, 1916, when he resigned. He was a member of the Boston Historical Society, as well as the Arlington Historical Society.

"In October, 1892, Mr. Adams married Bessie L. Tucker of Cambridge. Mr. Adams was one of the first to build a home on Addison Street, where the family has resided for many years. The wife and four sons survive. They are Charles J. Adams of Burlington and Laurence W. Adams, Ralph Adams and Henry S. Adams, Jr., all of Arlington. There are also two grandchildren, Jane and Charles J. Adams, Jr." Those of us who knew him intimately found him a sincere friend, keenly appreciative of the work of others and modest regarding his own.

W. S. Moody, in general charge of the transformer engineering department of the General Electric Company since its inception, has been appointed a consulting engineer for all transformer departments of the company and for all departments of the Pittsfield Works. Mr. Moody is relinquishing the administrative part of his duties in order to devote more time to the broader problems of the transformer business, especially development and future requirements. He will continue to make his headquarters at Pittsfield and, as chairman of the steel standardizing committee, will have general direction of all developmental work on magnetic steel for the company. — EDWARD G. THOMAS, *Secretary*, Toledo Scale Co., Toledo, Ohio. N. T. VERY, *Assistant Secretary*, 96 Bridge Street, Salem, Mass.

'89

Franklin W. Hobbs was re-elected on March 8 to the presidency of the National Association of Wool Manufacturers. — Miss Mary L. Beals, daughter of the Reverend Charles E. Beals of the South Main Street Congregational Church of Manchester, N. H., was married on June 30 to Carroll C. Hubbard of the Amoskeag Mills. — Richard Hooker's address is now 255 Berkeley Street, Boston. — WALTER H. KILHAM, *Secretary*, 9 Park Street, Boston, Mass.

'91

This is the first chance that the Secretary has had to report on the class luncheon held in New York last June, and the M. I. T. banquet. Gottlieb was appointed chairman of the committee to look after the luncheon and banquet. The luncheon was held at the Hotel Roosevelt. The following were present: Douglass, Swan, Spooner, Charles Hammond, George Campbell, Atkinson, Bird, F. Clouston Moore,

Aiken, Steel, Hatch, and Gottlieb. Several of the men took the excursion to the generating plants of the New York Edison Company on Saturday afternoon. Charlie Aiken and Mr. and Mrs. Gottlieb took the boat ride on the Hudson Friday night. Hammond also expected to go but got into a traffic jam and missed the boat.

You have all read a report on the banquet which appeared in The Review. The following '91 men, including their wives and relatives, were present: Mr. and Mrs. Gottlieb, Hatch, Mr. and Mrs. Swan, Warner Steel, C. F. Hammond, W. B. Douglass and son, Bird, and F. Clouston Moore. Aiken had for guests his nephew and wife, Mr. and Mrs. Drake of Ridgewood, N. J.

Arthur Hatch is building a new home on Woodland Road, Brookline. — Howard Forbes has built a new home at 30 Coolidge Avenue, Cambridge. — George W. Chickering is now located at 26 Hopkins Road, Arlington, Mass.

Our world traveler, Giff Thompson, wrote the Secretary while he was on a trip this summer to Norway and Sweden, and has also written a letter to Barney Capen. He was particularly enthusiastic about Norway and mentioned seeing the sun at midnight, three times in succession. (The Secretary wonders whether there is daylight saving time in Norway.) He also took in Denmark and spoke of going to Berlin. He mentions 400,000 bicycles registered in Denmark, which simply shows that Henry Ford still has further worlds to conquer. He mentions taking a number of photographs, and the Secretary suggests that he have some lantern slides made and give the Class a personally conducted tour some time this winter.

Morris Knowles is mentioned as one of the notables to read a paper on city planning at a recent meeting of the American Society of Civil Engineers. He is making quite a name for himself on city planning and zoning.

Charlie Garrison and Mrs. Garrison went to the Pacific Coast last summer and are now back home again in Cambridge. If the Secretary remembers correctly, he drove his own car all the way going out and made the trip in nineteen days, which is going some. Mrs. Garrison has been ill for some time and was obliged to go to a hospital on the coast, but she has now fully recovered. Charlie's boy is in the oil business on the coast. Charlie saw something of Shattuck and sends good reports of all the Shattuck family.

Barney Capen forwarded a number of letters which came to him in response to birthday cards and the following notes are taken from these letters. Charlie Aiken wrote from his summer place at Webster Lake, N. H., and says that his daughter has been in charge of the estate, there being cottages which they rent for the summer. He is to live with his daughter and they have bought a house at 42 Oak Street, Belmont. He is to have an office at 45 Bromfield Street, Boston, and will probably give up his New York office. He plans to do consulting work, presumably in connection with the soap and glycerin industry. — Robert Ball wrote from England and spoke very pleasantly of his visit to this country and the dinner which we gave him at the University Club.

Arthur Alley writes from National City, Calif., where he is running an orchard with

all kinds of fruits. He says that he has one man on the place constantly and engages others for picking and cultivating as they are needed. "The study of the care and growth of the trees is much more interesting than I had anticipated. Nature acts in a strange manner at times and investigations along new lines give me pleasurable occupation. The study of the causes of the diseases of the trees is a big subject and still in its infancy. The orchardists know very little about it as yet. It is in an experimental state, but the California lemon and orange today are equal in quality to any grown in the world." He says that they take frequent motor trips and this, with good golf courses, fine beaches, and so on, gives plenty of outdoor attractions. National City is just south of San Diego, almost on the Mexican border line.

Shattuck writes from Beverley Hills, Calif., in his usual happy way. He speaks of his work out in that country for the Solvay Process Company. He liked the country so well that he decided not to return to Detroit and gave up his connections with that company. His girl and boy both attended school out there and he seems to have no regrets at making his permanent home in Beverly Hills. He speaks of dealing in real estate to some extent, which presumably they consider a recreation on the Coast rather than a business. — HENRY A. FISKE, *Secretary*, Grinnell Company, 260 West Exchange Street, Providence, R. I.

'93

The members of the Class were shocked to hear of the sudden death, on June 6, of our classmate, Simeon C. Keith. He had a shock at the Exchange Club, Boston, on June 3, was taken home in an ambulance, and never regained consciousness. This was a second attack, the first having occurred about three years ago, and from which he recovered so that he conducted business as before. He attended the Class Dinner on April 22, at the Algonquin Club.

Keith was born on July 10, 1872, at East Bridgewater, and was the son of the late Mr. and Mrs. Simeon C. Keith. For two years after graduation from Technology, Keith was assistant in biology at the Institute, and an instructor the following year. During the summer of 1894 he studied fermentation industries at Copenhagen, Denmark. From 1896 to 1898 he was engaged in the manufacture of butter cultures. The next ten years he was engaged in dairy chemistry and bacteriology with H. P. Hood and Sons, Charlestown, besides carrying on a butter culture business. In April, 1908, he opened an office in Boston as a biochemical engineer. Some years ago he gave up private practice to enter the firm of H. J. Keith Company of which he became President; and was also Secretary of the Amos Bird Company. This latter company conducts an American Egg Products Factory in Shanghai, which is one of the largest American industrial enterprises in Shanghai.

Of it Bemis wrote: "On the way home from India in 1922, I visited the plant of the Midland Packing Company at Shanghai. This is a large, clean, modern plant for the packing of eggs. Millions of eggs come down the Yangtze-Kiang and other waterways to Shanghai and are there packed and distrib-

1893 Continued

uted to all parts of the world, particularly America and Europe, in two forms, dry-flaked and frozen. While in Shanghai I visited a number of plants under Chinese, Japanese, British and American management. There was not a single one of them that showed the up-to-dateness and the efficiency and progressiveness of the Midland Packing Company. Our classmate Simeon Keith is more responsible for this than any other one man. Anyway, he deserves the major credit and great credit for this really big accomplishment."

Keith made trips to China in the interests of the business and en route enjoyed the hospitality of our classmate, Maki, at his home in Japan. Keith wrote "Effect of Freezing on the Viability of Bacteria," the results of research work at Technology. He was a lecturer at the Institute from 1914 to 1920 on food preservation in the Department on Biology and Public Health. He was a member of the American Association for the Advancement of Science, the American Public Health Association, the American Society of Naturalists, the Exchange Club of Boston, and the Fruit and Produce Exchange. One of his hobbies was gardening, and he had a beautiful Oriental garden at his home at 138 Lancaster Terrace, Brookline, Mass.

He is survived by his wife, Mrs. Annie C. (O'Brien) Keith; three daughters, Miss Dorothy Keith, Miss Grace Keith and Miss Monica Keith, and one son, S. Curtis Keith.

In June, Sam Waldron, who is in charge of the Boston office of the American Bridge Company, moved from 200 Devonshire Street to very pleasant offices on the top floor of the Statler Building, 20 Providence Street, Boston. His mail address is Statler Building, Back Bay Station, Boston, Mass. — J. C. Hawley has sent in a change of address to 12 Fifth Avenue, New York. — FREDERIC H. FAY, *Secretary*, 44 School Street, Boston, Mass. GEORGE B. GLIDDEN, *Assistant Secretary*, P. O. Box 1604, Boston, Mass.

'95 Through the courtesy of Charles E. Locke, '96, we are able to record the following information concerning the death of our classmate, Walter N. Crafts: "Crafts was born January 22, 1872, at Shelby, Ala. He moved to Columbus, Ohio, in 1878, where he was educated at Oberlin Academy and Oberlin College, where he received a B.A. degree in 1892. In 1895 he was graduated from the Massachusetts Institute of Technology with the degree of S.B.

"He has held the positions of superintendent of the Sharon Plant of the American Steel Foundry; manager and part owner of the Crucible Steel Forge Company of Cleveland; assistant general manager of the British Forgings, Ltd., Toronto, Canada, during the late world war; President and General Manager of the Canadian Electric Steel, Ltd., Montreal, from 1920-1924; manager of the Reading Steel Casting Company, Inc., from September, 1924, to the date of his death, June 8, 1927.

"In his capacity of works manager for the Reading Steel Casting Company of Reading, he drove on Wednesday, June 8, to some nearby town in his own car, and on the way back from Philadelphia was apparently over-

come by diabetic coma. He was rushed to the Montgomery Hospital at Norristown about eight o'clock in the evening, and he passed away at midnight. Services were held at Reading on Saturday, June 11, after which the body was taken to Boston for interment.

"He is survived by his wife, Annie Francis, whom he married in 1898; a daughter, Mrs. Elizabeth Rinehart of Wilmington, Del.; a son, Walter Crafts, who graduated in metallurgy at Yale in 1924, M. I. T. 1926, and who is at present with the Illinois Steel Company in Chicago; and three younger children, Edward, Robert, and Alice. His father, Walter Crafts, was one of the early members of the American Institute of Mining Engineers, and a charter member of the Lehigh Chapter, and the American Institute of Mechanical Engineers."

The Class Reunion held at the Waldorf Astoria, in New York, during the Technology Clubs Associated Convention on Saturday, June 11, was attended by the following: E. C. Alden, W. C. Brackett, A. L. Canfield, F. B. Cutter, A. W. Drake, F. A. Hannah, E. L. Hurd, John D. Moore, Franklin A. Park, S. S. Sadtler, Frank C. Schmitz, R. B. Sheridan, Gerard Swope, and W. S. Williams. Fred B. Cutter gave a luncheon on the following Sunday, June 12, at the Pomonok Country Club which was well attended.

The New York members held their regular monthly luncheon at the Railroad Club, 30 Church Street, on October 6. It was attended by the following: W. C. Brackett, A. L. Canfield, W. B. Clafin, F. B. Cutter, B. C. Donham, A. W. Drake, John H. Gardiner, E. H. Huxley, Franklin A. Park, Walter J. Rickey, F. C. Schmitz, Gerard Swope, and G. H. Wiggan.

Walter J. Rickey, managing director of the Singer Manufacturing Company at Clyde Bank, Scotland, returned to Scotland on October 8, after a short business trip to the States. — Franklin A. Park, Vice-President of the Singer Manufacturing Company at 149 Broadway, New York, sailed for Europe on the Majestic on October 15. — John D. Moore is now in Europe. — LUTHER K. YODER, *Secretary*, Chandler Machine Company, Ayer, Mass.

'96 At the convention of the National Association of Cotton Manufacturers at the Copley Plaza Hotel in Boston, October 27, Bert Thompson took part in the discussion of humidifying textile plants. Bert has specialized along this line for a number of years and has, in fact, patented humidifiers which are finding much practical application. — Major Hardy of Buffalo has been under the weather for over a year past and, although he has kept in touch with his business, he has not been able to be very active. The last personal report from him was that he was much better than a year ago, but he still walks very badly and expects to go to Los Angeles for the winter in order to avoid the snow and sleet which prevail in Buffalo. Actually these conditions do not bother his general health very much, but make it difficult for him to get around.

Report from Mrs. Palmer whose son, Edwin, is being assisted financially by the Class, is that he spent the summer in camp in New Hampshire, and although the good food

and open air were beneficial he suffered from lack of his regular exercises which are so essential to the improvement of his limbs. He is now back in Cambridge and under Dr. Rockwell's care, with the expectation that he will be soon back on his regular program of improvement. It is planned to continue the class financial aid for another year at least.

Charlie Batchelder was met by the Secretary in Walker Memorial at Technology on September 29. He reported that he has a boy at Technology and therefore has a live contact still with us. Charlie retired from business in the produce market some years ago, but he has been by no means inactive and says that he is just as busy as he ever was while in the market. For a while his health was not very good, but at the present time he looks and acts as if he were back to normal. — On September 24 the Secretary received a pleasant call from Con Young and Mrs. Young, who were motoring back to Washington after their summer trip which included Maine, the Adirondacks, and Canada. They had also seen Joe Clary and his family at their summer home in Laconia, N. H.

In the last issue of The Review there was some conflict in the report of the whereabouts of Mark Allen. Mark has now written officially that he returned from his six months' trip to Europe last spring, but he was absent during the summer on a long hunting and fishing trip in Quebec. Later on the Secretary hopes to publish a somewhat detailed report of Mark's trip which, of course, will be properly censored. He expressed himself as being glad to be back in the United States and said that the only '96 man he saw was Harry Fisk, who happened to return on the same boat, so they had a number of visits and went over old times. Harry's son was with him, and both were returning on a hurry-up call on account of the serious illness of Mrs. Fisk. Mark reported that after considerable labor he had located Willett Wood, who had been lost for some time. Wood's home address is 140 Virginia Avenue, Detroit, Mich. He is in the metal stamping business with his father and other brother and the business address is 170 East Larned Street, Detroit.

Arthur Baldwin has recently been appointed European Manager for the International General Electric Company. Arthur's record is Boston Latin School of the Class of 1891; a year of travel in the United States and Europe; four years at Technology, at the end of which he entered the employ of the General Electric Company and has been with them ever since. He started in the test course at Schenectady. Two years later he was assigned to the railway engineering department, and very soon was transferred to the engineering section of the foreign department, over which he presided for an extended period. In 1912 he was made assistant manager of the foreign department which he held until the formation of the International General Electric Company, when he became manager of the department of Europe. This work called for visits to Europe in 1920 and in 1923 in the company's interest. In June of the present year Arthur was transferred to the executive staff of the International General Electric Company for special duties in Europe, and on August 1 he received the appointment of General European Manager. Classmates will agree that this is a well

1896 Continued

merited appointment, especially as Arthur has many interests apart from his profession and is a student of economics, languages, and music. He has two sons, sixteen and twenty-one years of age, both of whom have studied in Europe as well as in this country.

Bradley Stoughton was in Boston, on September 30, on a matter of professional business, so that the Secretary was able to see him for a short time and have the pleasure of sitting with him at luncheon in Walker Memorial. — Dr. Chenery, who has been in the Boston Public Library for a number of years, has been recalled to his former position as Librarian of Washington University, St. Louis, Mo.

A very appreciative note has been received from Mrs. MacLachlan for the tribute of flowers sent by the Class.

No issue of The Review would be complete without some mention of Gene Hultman. However, this time we will make it short and merely say that in the Boston *Evening Transcript*, for September 3, was a lengthy illustrated account of his latest device for fighting wharf fires. It is a little motor boat with a small gasoline pump, which can go almost anywhere under the wharves and get right at the heart of the fire. For further information the reader should consult the *Transcript* editors.

The trip of Billy Anderson around the world has been reported in detail by him. He and Mrs. Anderson with their boy and chauffeur left New York on January 6 on the S. S. *Resolute* of the Hamburg-American line. The places visited were as follows: Funchal, Gibraltar, Algieras in Spain, Algiers, Nice and Monte Carlo on the French Riviera, Naples, Athens, Haifa and Jerusalem in the Holy Land, Alexandria and Cairo in Egypt, Port Said. In India they visited Bombay, Agra, Delhi, Benares and Calcutta. Then Colombo and Kandy in Ceylon, Rangoon in Burma, Padang in Sumatra, Batavia in Java, Singapore, Johore, Bangkok in Siam, Tarakan in Borneo, Zamboanga in Sulu, Manila in the Philippine Islands, Hongkong, Formosa, Tientsin, Peking, Seoul and Chemulpo in Korea, Kobe, Yokohama and Tokyo in Japan, Honolulu and Hilo in Hawaii, San Francisco, Los Angeles, Colon in the Panama Canal, Havana and back to New York.

From the office of Frank Hubbard some clippings have been received giving the account of his death, and also referring to his work in Plainfield, N. J. His death occurred on February 23, after a prolonged illness which he bore most cheerfully. He was born in Plainfield, N. J., on February 24, 1868, and practically all his life was spent in the old family homestead. He was the son of Joseph A. and Charlotte Hubbard, and is survived by his widow, Mrs. Bessie Titsworth Hubbard; a sister-in-law, Miss Ethel L. Titsworth; and a brother, William C. Hubbard.

Between the time he graduated from the Plainfield High School and his entrance at Technology he spent nearly three years on a ranch in Wyoming for the benefit of his health. He practised civil engineering continuously in his home town until his death, but he found time to devote himself to civic and religious affairs. He was a member of the Board of Education since 1915, its President since 1923, and chairman of the building committee since 1917. He had been Borough

Engineer for Dunellen and North Plainfield. His interest in the Y. M. C. A. and the Y. W. C. A. caused him to supervise the construction of the buildings for both of these associations.

As a member of the Seventh Day Baptist Church he was connected with several of the denominational interests. He was Treasurer of the Board of Trustees of the Seventh Day Memorial Fund and Treasurer for over twenty-five years of the American Sabbath Tract Society. In 1918 he was President of the Seventh Day Baptist Conference held in Nortonville, Kans. He was also a charter member of the Plainfield Rotary Society and a member of the American Society of Civil Engineers.

Eloquent tribute was paid by the local papers editorially, and it was stated that few men had given more unselfishly of their time to public welfare work in Plainfield. He was a veritable target whenever a capable man was needed for institutional work since he never side-stepped or spared himself. He contributed as best he could to the improvement of the social system in which he lived. He tried to make the world better by good deeds; his presence was welcomed everywhere, and he leaves an honored memory among his fellow-men.

The leading article in the *Tech Engineering News* for October was by George Burgess on the work of the National Bureau of Standards, dealing particularly with the opportunity it offers for Technology graduates. George was in attendance at the meeting of the Advisory Committee for the Department of Mining and Metallurgy at Technology, on October 28. At that time the Secretary met him personally and received a report of his European trip. The purpose of this trip was to attend the Seventh International Conference of Weights and Measures in Paris. Actually this was preceded by a preliminary conference in London which was participated in by the Washington, London, and Berlin laboratories. This preliminary conference laid out the program of the main conference. The time spent by Burgess was two days in London and two weeks in Paris. Dr. Stratton of the Institute was also in attendance at these meetings. Important results came from the conference, among which were: new international temperature scale; International Bureau of Electric Measurements; standard temperatures in calibration of gauge blocks; and the length of the meter in terms of light waves. — CHARLES E. LOCKE, *Secretary*, Room 8-109, M. I. T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

'97 At the Class Reunion at Old Lyme last June, a member of the Class was asked to assume the responsibility for collecting some class news for one number of The Review. It fell to my lot to do this for the December number and the items which follow are the result of about forty letters sent out.

Joseph Bancroft has been appointed a member of the Committee of One Hundred, organized by the National Association of Manufacturers, to draft their third platform of industry, which should be of interest to all those connected with industry in the United

States. "Otherwise," he says, "I have been pursuing the quiet life, and have not even had an opportunity to get a vacation."

William Binley reports that he is still with the Bethlehem Shipbuilding Corporation at Quincy, Mass. They are busy now completing the airplane carrier *Lexington* for the United States Navy and expect to have her finished by the end of this year. They also have a contract for building five new cutters for the United States Coast Guard. The keels of these vessels will be laid this fall and the construction rushed so as to get the boats in service next year. The general design of these vessels was prepared by Hunnewell, '97, as Superintendent of Construction and Repair of the Coast Guard. As a result, Constructor Hunnewell takes a flying trip to Boston once in a while to see how the vessels are progressing. Binley has built a house in Braintree, having moved there from Wollaston where he has been living for the last five years.

Fred Busby is at the head of the course in chemistry at the New Bedford Textile School, just starting his eighth year. He says, "The instruction given at this school is very practical and we are certainly turning out some very good men. About sixteen years ago I married Miss Jennie Blackinton, of Blackinton, Mass., and we have two children, a son and a daughter, both of whom are in the public schools. As to recreations, and so on, I don't recall any at present. When I lived up in the Berkshires I did considerable hunting and fishing, tramping on the mountains, snowshoeing and other outdoor sports, but since coming to this flat country with its numerous swamps I have but little desire for that sort of thing. At first, when coming from inland to the seashore, I was very enthusiastic about boating, so I took advantage of a certain bargain and bought a motor boat which I could never make 'mote.' I gave the thing away and was not interested any more.

"After graduating you will remember I was assistant in Industrial Chemistry for a time and then went into textile finishing plants where I worked for fifteen or sixteen years and then went into business. This became distasteful after a time, so I sold out and took up teaching again along textile lines."

Proctor Dougherty, Chairman of the Board of Commissioners of the District of Columbia, writes: "I spent a most enjoyable August at Wellfleet, Mass., on Cape Cod. While there I had the great pleasure of having calls from Benjamin Howes and Arthur Hopkins.

"In order to rejuvenate my somewhat jaded condition and to prepare myself for the strenuous winter duties as Commissioner of the District of Columbia, I spent my time in swimming, sailing, climbing, and walking, and have therefore returned with hardened muscles and enthusiastic spirits."

Irénée duPont writes: "I am just one of the million who paddle along, do their job after a fashion, enjoy life and grow lazier as they get older. After four years with the duPont Company, while they were making munitions during the war, and seven years following as President of that company trying to get things back to normalcy, it seemed desirable for me to retire. Accordingly, a year ago last March I resigned as President and am now chairman of the finance committee, with much abbreviated responsibilities and duties. I am sure this was for the advantage of the

1897 Continued

company and conducive to my own peace of mind. Incidentally it enables me to try to play golf oftener and not feel that I am playing hookey when I do. It has not improved my game sufficiently to jeopardize Bobby Jones.

"While on a short trip abroad during July and August, I saw Fred Fuller in Paris. He had his family with him, but seemed to be enjoying the good food and liquid cheer for which Paris is famous. Probably by now a good many of my classmates have joined the 'Grandfather's Association.' I was initiated last year, but I am still unable to coordinate my actions with that dignified position. If any of you can give advice, it will be thankfully received."

Jerome Fort, President of Jerome H. Fort, Inc., real estate brokers and insurance agents, Oneida, N. Y., gives this account of himself: "I have been here in Oneida for the past fifteen years. Before that I had an office in Syracuse, N. Y. Then I opened the office here and ran the two for a while. Then, as this seemed a better location for country business, I closed out the Syracuse office and concentrated here. I married many years ago Ogdena M. Randel, daughter of a physician here, and we live in the old Randel home which is just outside the city of Oneida. We have never had any children. I was one of the founders of the Farm Brokers' Association, its Secretary for ten years, its President for two years and I am still on the Board. This is a very successful organization handling country properties—farms, estates, and so on, throughout the state, and is the one which set the pace for similar organizations throughout the United States. Outside that about all I can say about myself is that I am kept pretty busy with my local business here. I am a Past Master of the local Masonic Lodge, just became past President of the Rotary Club, was Park Commissioner for six years until my resignation last fall, and so on, the usual run of life of an ordinary American citizen in one of the smaller cities. I am a member of the Presbyterian Church, have a class of adult women in the Sunday School, where subjects handled are not always to be found in the 'Lesson Leaf.' I am a member of the Country Club and Vice-President of the Oneida Masonic Temple Corporation. If I live eleven days more I shall be fifty-five years old."

Alfred Hamilton has been in the liability insurance business in New York City since 1900, lives in Montclair, N. J., was married in 1906 and has three children. The older girl is entering Vassar this fall. His recreations are golf and tennis and he is a member of the Delta Tau Delta Club of New York, the Montclair Golf Club and the Montclair Athletic Club.

Edgar Hawkins writes: "My children are pretty well grown up. One daughter is married. One son was taking Course II at Technology in the Class of 1927. Another son is in the Class of 1930, taking Course I. Still another daughter is at Miss Wheelock's School. My sons left Boston in June, returning last week. They drove over 13,000 miles during the summer. It was my good fortune to be with them for more than half that mileage, from Rochester to San Francisco. That part of the trip covered fifty days. Mrs. Hawkins and my daughter joined us at Denver and drove on to the coast.

"We camped where night overtook us. We visited all of the government parks except Glacier National Park. We even saw the big redwoods. We were remarkably fortunate throughout the whole trip, with only two delays of about an hour and a half each on account of rain. One was in the afternoon and the other in the morning. There were two nights when I slept under cover on account of rain.

"We drove an old touring car with the top down. It was seldom up except for a few days at noon in southern Utah. Anyone can take the trip, everyone should. Unless you know the country between here and the Pacific Ocean as well as you know the Pacific Ocean, I will urge you particularly to take this trip."

Gilbert Pratt writes: "I had very much hoped I would be able to attend the Thirtieth Class Reunion last summer, but business prevented my getting away at that time. As to my business connections, from 1897 to 1905 I was assistant chemist for the Massachusetts State Department of Health; from 1905 to 1914 I was chief chemist for the Rhode Island State Department of Health; from 1914 to 1920 I was chief chemist in charge of chemical and operating work for the New York Continental Jewell Filtration Company and since 1920 I have held my present position of district sales representative for Wallace and Tiernan Company, Inc., of Newark, N. J. I have charge of what is known as their District No. 1, which includes New England and New York State. My present work, while allied with chemical and engineering problems, is essentially a sales job, although as district man for this company, I have general supervision of all angles of the company's activities in the area mentioned, including the general goodwill of our customers from the standpoint of both equipment and service.

"As to family, I was married in 1900. I have one son, Roger, who was born in 1901, who in turn is married and lives in Kansas City, Mo. My son made me a grandfather three and a half years ago and about two months ago favored us with the second granddaughter. From this latter point you can see that I have for several years now been in what might be termed the select class. While undoubtedly a good many of the boys are in the grandfather class with me, I rather imagine that the percentage is none too great.

"As to recreations, at the present time I am not active in any sports, but was for quite a number of years. In fact, until I came to New York in 1924, I was quite actively engaged in tennis, particularly while I was in Rhode Island. I do not find the opportunity now to engage in this sport, although I have wielded the racket a few times."

Percy Stiles, with whom the compiler of these items had a delightful four-day outing this summer in the mountain country which lies near the Maine-New Hampshire border line, sends the following brief but comprehensive summary: "Thirty years have brought me the supreme and rewarding experiences of a normal life as husband and father; latterly I have known bereavement also. As a teacher I have keenly enjoyed the social give and take of the classroom. I have been less attracted by the monastic business of research and in some degree baffled and discouraged by the unlooked for shift of my

subject (Physiology) from a naturalistic toward a mathematical science. I am at my best as an elementary instructor and my three textbooks, which are adapted for babes and sucklings, have been well spoken of. I have perpetrated two other books of a non-scientific and personal character the making of which has given me much pleasure: 'Way-faring in New England' (1920), and 'Dreams,' Harvard University Press, 1927."

H. W. Ballou, I, in a recent letter pays a glowing tribute to the Summer School of Civil Engineering at Machias, Maine. His son attended there this summer, and Ballou spent a week-end at the camp. He sums up the whole matter in these few but forceful words: "No single thing within my memory has so proved to me the progress of this country and particularly M. I. T., as the difference between this summer school and the first summer school ever held at Machias which I attended in 1895 or 1896." — JOHN A. COLLINS, JR., Secretary, 20 Quincy Street, Lawrence, Mass. CHARLES W. BRADLEE, Acting Secretary, Bradlee and Chatham, 261 Franklin Street, Boston, Mass. HARRY M. LOOMIS, Secretary Pro Tem, 2115 P Street, Washington, D. C.

'99 Charles B. Page, Manager of the Steamotor Company, Chicago, Ill., delivered an address before the Western Society of Engineers on the topic of "High Pressure Steam Turbine Locomotives." In this address, which received very favorable press comment, the smokeless feature of turbolocomotives was particularly emphasized. — Frederick A. Watkins, also of Chicago, sent his daughter to Wellesley for the purpose of getting a higher education, and then he went north on a fishing trip in October.

Hervey J. Skinner has sent in his address which is now 246 Stuart Street, Boston. Hervey hasn't moved, but his house number has. As he did not choose to follow it, he kept the one the city fathers gave him. Hervey analyzed the soil on George Priest's lawn, and this is what George says: "Practically all of my spare time after the frost went out of the ground has been employed in the construction of a tennis court at my home in Brockton, which, with the aid of Hervey Skinner's soil analysis, turned out to be one of the best in town. Since that was completed most of my vacation, week-ends and holidays, have been spent at our summer camp in Ashburnham, where I have been gradually acquiring real estate until I now have sixteen acres on the top of Packard Hill, an elevation of 1,350 feet within sixty miles of Boston. The site has many of the advantages of the mountain region in New Hampshire, including a view of the horizon for 360 degrees to a distance of sixty miles, taking in the Watatic Mountains, Monadnock, Southern Green Mountains, and Greylock on the west. I hope some day to have the pleasure of entertaining some of the '99 boys there."

D. C. Churchill of Berea, Ky., reports a busy summer and a determination to attend the Thirtieth Reunion in 1929. George Jackson wrote from Long Island that he went on a vacation, but some one opened the flood gates and forgot to close them so he went home. Then the sun shone. Altogether a mean time was had by all.

1899 Continued

Frederick Waddell writes: "I have read the July number of The Review with great delight. Hope you have enough sketches to keep going for a year. We will hope for a grand reunion in 1929." To his last hope your Secretary subscribes heartily. But his first hope is a vain one. The sketches herein are the last in my desk. There are three more issues of The Review. Readers take notice.

Europe was the Mecca of several '99-ers this year. Lewis Emery arrived home from Europe in September, and was one of the first members of the Class to acknowledge receipt of the notice about the Alumni Dormitory Fund Campaign. Lewis likes the idea of a Thirtieth Reunion as does also Norman Rood, who approves it from Wilmington.

Tom Robinson finished the plans of Arthur Hamilton's house, and then the two of them left the contractor to build it and they took a vacation in Brittany and Normandy. On the other hand, Edward H. Hammond and his family made an extended stay at the Lake Placid Club, New York. Their vacation was enlivened, if one may be permitted the term, by the overturning of his motor which was crowded off the road by a speeding machine. Fortunately none of the party was injured aside from slight scratches.

Harry M. Keys writes from Atlanta, Ga., that he has been carrying on research and survey engineering for the Southern Bell Tel. and Tel. Co., in the nine southeastern states, and the expansion has been little short of marvelous. He states also that the textile industry has been developing rapidly and that research therein would reveal some interesting facts.

Clancey M. Lewis, who has just completed twelve years as manager of the Manufacturers' Association of Washington, Seattle, writes that he did not take a vacation this year, but took advantage of every opportunity to play golf. He has been at the game a little over a year and in the July issue of the *Northwest Golfer* his first contribution to the literature on the subject appears under the caption, "The Autobiography of a Yearling." He qualified this year as one of the thirty-two to compete for the club championship. Later on he participated in an inter-club match and played with the only known golfer who broke his leg while playing and after first aid continued the match to the eighteenth hole; it afterward developed that the leg was wooden. Lewis' letter was written immediately after his return from the fifth annual convention of the Pacific Coast Foreign Trade Council at Victoria, B. C., where he appeared on the program under the subject "Utilization on the Pacific Coast of Imports and Their Values in Developing Foreign Trade." In the last issue of the *Washington Purchasing Agent and Manufacturer* he has an article covering the mechanical set-up of all the operating pulp and paper plants in the State of Washington, and advises that there has been one new paper or pulp project, with substantial backing, launched each month of the current year. He is of the opinion that manufacture of rayon in the Pacific Northwest is soon to follow as that section of the country possesses the best basic materials for the purpose.

We regret to record the death of one of our classmates, G. Dana Emerson. Following is

a notice taken from a Boston newspaper: "G. Dana Emerson, former subway engineer for the City of Boston, died suddenly yesterday at Estes Park, Colo., when he was stricken on the tennis courts of his summer home here. He left Boston about nine years ago.

"George Dana Emerson was engaged by the Boston Transit Commission, the predecessor of the present Boston Transit Board, under Chief Engineer Howard A. Carson, to work on subway plans. He was an associate of Edmund Davis, an assistant to Mr. Carson. The commission was then planning the Boylston Street subway, the Fort Point Channel and Cambridge tunnel subways. He served on the Transit Commission eighteen years and took an important part in the engineering plans in connection with the building of the Washington Street tunnel as well as the Cambridge and Boylston Street tunnels. Mr. Emerson was a graduate of Massachusetts Institute of Technology. He lived in Denver for a time and also had a home in Florida." — W. M. CORSE, *Secretary*, 810 18th Street, Washington, D. C. A. H. BROWN, *Assistant Secretary*, 53 State Street, Boston, Mass.

'00

The Secretary was delighted to receive a call from Charles J. Davis about a month ago.

Davis was with us during the first two years in school, electing the work in civil engineering. Once, or perhaps twice, since then he has met Davis at some big Technology reunion, but it had been a long time since the last meeting and naturally a good powwow resulted. Davis has been in railroad work almost continually since 1900, having been connected with the Boston and Maine, New York, Ontario and Western, New York Central, New York, New Haven and Hartford and the Boston Elevated Railway. Naturally this has carried him about the country a good deal, leaving little time to settle down in one place. Of late he has been living in Providence, R. I. He has three fine boys, the oldest about to graduate from Brown University. The two younger boys are studying at Middlebury, Vt.

Arthur W. Geiger dropped in on Bugbee recently as he was returning to the West Coast after a trip to Europe. Geiger was in mining engineering and has followed the profession since leaving school. He reports seeing Tweedy often, and if this happens to come to the eyes of Tweedy, we hope he will apprise us of the fact and name his whereabouts.

Under the date of August 26, *Science* printed the following item: "Dr. R. W. Balcom, chemist in charge of the food control laboratory of the United States Department of Agriculture, has been designated as a member of the Food Standards Committee." We don't profess to know much about the Food Standards Committee, but we do know Balcom very well, and you will recall him as a very enthusiastic and energetic member of the chemistry course who later studied in Germany, and taught at the University of Michigan and at the Institute. Since 1908 he has been in the Department of Agriculture.

Bowditch found the following in some unmentioned paper or periodical and sent it in for this column: "The walls of the office of Kenneth Seaver, sales manager and director of Harbison-Walker Refractories Company

of Pittsburgh, are covered with remarkable etchings and prints. Collecting them is his hobby, and many of them are so rare that they were loaned to the Carnegie Museum for an exhibit. During the exhibition one of Mr. Seaver's friends overheard a rather amusing conversation. An old lady was apparently inflicting art upon her equally aged husband. The poor fellow looked utterly tired and bored. They passed by several of the etchings loaned by Mr. Seaver. The museum had placed the name of the lender in somewhat bolder type than the names of artists and other information. 'Who is this man, Seaver?' asked the old lady. The old man sighed, 'I don't know, but he certainly made some rotten pictures.'" It looks as if Ken had broken out in a new place, for we never knew before that one of his hobbies was art. We shall look for an unusually good Christmas card this year. — GEORGE E. RUSSELL, *Secretary*, Room 1-272, M. I. T., Cambridge, Mass.

'01

Through the kindness of Ralph Stearns I have just received the following notice relative to Chester Chubb. This appeared

in the *Electrical World*, and I quote the item verbatim: "C. N. Chubb, a Vice-President of the United Light and Railways Company and of the Iowa and Nebraska Engineering Construction Company, with headquarters at Davenport, has been made President of the Iowa-Nebraska Light and Power Company recently formed for the purpose of unifying control of some two hundred plants in these two states and one in Missouri. He has been transferred to Lincoln and will make that city headquarters for operations of all the plants, which include electric and gas properties, street railways, and ice factories. B. J. Denman, Richard Schaddelee, O. J. Shaw, and Frank H. Brooks are named as Vice-Presidents.

"A graduate of the Massachusetts Institute of Technology, Mr. Chubb's first utility work was with the Harrisburg, Penna., Gas Company, which was followed later by connections at Kansas City, Sioux Falls, and Michigan City. Then he was promoted to the position of general manager of the Northern Indiana Gas and Electric Company at South Bend. In 1917 Mr. Chubb joined the United Light organization and was made general manager of the People's Light Company at Davenport. At the time the Lincoln, Nebr., properties were acquired by the United he was made a Vice-President in charge of operations of these and Iowa plants.

"Mr. Chubb has been active in association work in the Middle West for a number of years, at one time holding the office of President of the Iowa Section of the National Electric Light Association."

I have just received from Fred Clapp a most interesting piece of news. Apparently his three weeks' sojourn with his family was too much for him and early in September he arrived in Persia, where he has become the petroleum advisor to the imperial government of that country. He sends a card with a variety of cabalistic symbols which I gather to be the Arabic alphabet, if that be the one used by the gentle Persian. What it actually means I cannot say as I have forgotten my Persian, but from its general appearance it

1901 Continued

seems spicy. This is, of course, entirely appropriate for the Orient. Fred adds a brief note as follows: "Arrived at Teheran early in September, after being quarantined for five days at Kasr-i-Shirin, an outlandish village on the borders of Persia. Am just starting for a tour through the provinces. Poland, '90, is here also."

Carl Johnson writes from Pasadena, Calif., his address being Box 46, Route 4, so that he is evidently one of the noble brotherhood of which Bill Pepperell is the prototype. Carl states that he has retired from active business, and adds: "My press agent advises against giving out any news at this time and to wait till the excitement over Lindbergh dies out a little. The world has stood nearly all it can at one time. In the meantime, I am sitting pretty in an ideal country of sunshine and flowers, mountains and sea, trying to keep what I have and accumulate a little bit more of health and happiness with the assistance of a wife and child."

To me this is reminiscent of the brave words of the Strawberry King when he entered into his heritage on the sunlit coast of Maine. But alas for high endeavor. The Strawberry King is no more retired — no one would accuse him ever of being retiring — but is at the present time running the town of Charlottesville, Va., and exercising a benevolent supervision over the remainder of the state. I quote from the Public Service Magazine published in Chicago: "So much for a few routine facts. But the story of this company could no more be told in proaic terms than could the story of the country it serves. At once the narrative is enlivened by the dynamics of personality. Just now it revolves around a most resourceful, almost unique personality, A. W. Higgins, Vice-President and General Manager of the Virginia Public Service Company. Mr. Higgins, a native, by the way, of Massachusetts, where, in John Adams, Jefferson found one of his most intimate early co-workers, is a most successful exponent of that method of management which instills in every individual in the company the deepest concern for its welfare and a feeling of real proprietorship. He takes these men and women from all over the property, in all of these 137 communities, and molds them into a great, happy, efficient family. He very wisely does not neglect the social side of life in attaining this mutually desirable and profitable end. Under his system business and pleasure are combined in a happy fashion, in which business becomes the pleasure of every individual. And all of this process is worked out as the choice, not as some surreptitious company device, of all members of this fine family."

There is more of the article, but as it deals with other personalities less known to us than the Strawberry King, I refrain from further quotation. I am putting this in on the chance that it will meet Carl's eye and that his sunny days in Pasadena will be embittered by the thought that he, too, will be left from his sylvan paradise and protesting be once more hurled into the maelstrom of commercial contention. To cheer him, however, I will add that when last seen the Strawberry King was both fat and handsome.

Al Sulzer, who has probably been the biggest single factor in George Eastman's success, as he went to the Kodak Company

immediately on graduation, writes from 96 Pelham Road, Brighton Post Office, Rochester. Al is assistant manager of production of the Eastman Kodak Company, in general charge of production of films, photographic papers, and so on. He adds that his work covers everything from experimental studies to the direct executive work of running the plant. At the time he wrote in he was just leaving for Europe to inspect the Eastman properties in France and Germany. His wife and daughters were in Paris and he expected to join them there, thereby adding a recreation element to his business trip. Some of you men may disagree with this summary. I know Al and I'm right.

Passing notice is given of the next general Class Reunion which will be probably the social event of June, 1931. *The Spur* and *Town Topics* please copy. Also the *Social Register* of Oklahoma for the benefit of Bill LeBosquet. — ALLAN WINTER ROWE, *Secretary*, 4 Newbury Street, Boston, Mass. V. F. HOLMES, *Assistant Secretary*, 131 State Street, Boston, Mass.

'02 A month seems a very short time in which to dig up Class Notes in comparison with a whole summer, including an important reunion. Pendergast reports running across Arthur Jackson at the Chemical Exposition in New York. Jackson is Vice-President of the Darco Sales Company at 45 East 42d Street, New York. He has been connected with this concern for several years past.

The second Tuesday of each month has been fixed as '02 day at the weekly Technology Luncheons at the University Club, Boston. All classmates are urged to make a special effort to take in the luncheon on that day. Ritchie, Patch, Fowler, and the Class Secretary were on hand on October 11, and look for a larger gathering on November 8.

Roger Greeley, as chairman of the Massachusetts Federation of Planning Boards, delivered an address on Monday evening, October 24, before the American Civic Association at its meeting in Boston. The subject of Roger's talk was "Development of the Boston Metropolitan District." — FREDERICK H. HUNTER, *Secretary*, Box 11, West Roxbury, Mass. BURTON G. PHILBRICK, *Assistant Secretary*, 246 Stuart Street, Boston, Mass.

'03 The New York Reunion last June has been fully described in The Review. Your Secretary appointed Hewitt Crosby to have charge of the '03 activities there and takes this opportunity publicly to thank him for his painstaking work in managing our part of the affair.

Crosby's canvass resulted in twenty-four replies, a number of which were acceptances. He reports as follows: "All had a jolly good time. It was great fun to see some of the classmates whom I had not laid eyes on since we left Technology. Various events were attended by Bell, Bradshaw, Chamberlin, Clark, Crosby, Doran, Haskell, Joyce, Allen, Crowell, MacMenimen, Osborne, and Welsh. Many of the wives came too and the time for exchange of ideas and reminiscing was gone all too quickly. All of the '03 men looked well, prosperous and happy. Those who

brought their wives exhibited visible reason for their happiness. Some day we'll have a little affair at which the coming generation will be put on view."

Myron Clark reports under date of June 30 that Robert J. King, '03, formerly of the U. S. Rubber Company, New Haven, Conn., has just entered the employ of the Tyer Rubber Company, Andover, Mass., as head chemist, Clark being President of this company. — Gleason reports having seen George Wood on a train last June, when he learned that George's older son, Bill, was just graduating from Exeter and expected to enter Technology this fall.

A. L. Fischer, 160 Winona Avenue, Highland Park, Mich., met with a serious industrial accident this summer which resulted in the loss of one of his eyes. No further details are available at this writing. — W. E. Mitchell, after a four months' business trip in South America last spring, was transferred to Georgia as Vice-President and General Manager of the Georgia Light and Power Company, Atlanta, Ga.

We hear a bit of news indirectly from our long lost W. C. Lounsbury of Superior, Wis. He is President of Lake Superior Technology Club and Manager of the local utility company. He has five children, the oldest a daughter in Carleton College, another daughter and two boys in high school, and the youngest a boy of six. These men who could give us all kinds of news are the ones that hold it tighter than an oyster, but we dig it out now and then. While there is life there is hope. — G. H. Garcelon has been moving himself and his job this summer to Springfield, Mass. He is with the Westinghouse Electric and Manufacturing Company.

One of our correspondents some months ago wrote, "By the way, in another year we bald-headed fellows will have been out of Technology twenty-five years. Do we have a Quarter Century Reunion?" Answer: We do, if we have kick enough to reply to correspondence and to come to a reunion — for the bald and also the not so bald — in 1928. Conserve your hair.

From a monthly publication of the Canadian Pacific Railway we present the following news of S. G. Porter: "Samuel Graham Porter, whose photograph appears on our front cover, newly appointed head of the Canadian Pacific Railway Company's Department of Natural Resources at Calgary, was born September 1, 1875, on a farm in Texas, where he lived until he reached the age of twenty years. He was graduated from the Baylor University at Waco, Texas, with the degree of B.A. and M.A. For a time he taught school, but soon forsook this for professional work in the engineering line, and after attending the Massachusetts Institute of Technology, where he received his degree of S.B. in Civil Engineering, joined the U. S. Reclamation Service on irrigation surveys, location and construction, remaining in that position for three years. Then followed a period of seven years in Colorado as chief engineer of the Arkansas Valley Sugar Beet and Irrigated Land Company.

"Mr. Porter came to Canada in 1913 as irrigation expert for the Dominion Government. He joined the staff of the C. P. R. in August, 1918, as superintendent of operation and maintenance of the company's Leth-

1903 Continued

bridge Irrigation System. On the first of April, 1925, he was made Assistant Manager of the Department of Natural Resources at Calgary, and on Mr. Naismith's retirement, September 1, 1927, was appointed to succeed him as Manager.

"Mr. Porter has always been prominent in engineering circles, being a member of the American Society of Civil Engineers and Vice-President of the Association of Professional Engineers of Alberta. In community work, also, he has always been active, having been, at Lethbridge, President of the Rotary Club and Vice-President of the Board of Trade. He is at present a member of the Calgary Rotary Club."

You may be interested to know that the form letter asking for news, mailed to all class members (about 300) a year ago, brought a total of thirty-two replies. This shows an interest in class news of about ten per cent of the members. I wonder if only thirty-two members read the class news. Are you one of the silent ones? — CHESTER S. ALDRICH, *Secretary*, 10 Beaufort Road, Jamaica Plain, Mass. GILBERT H. GLEASON, *Assistant Secretary*, 25 Huntington Avenue, Boston, Mass.

'05 About the first of October your Secretary and his wife decided to explore the Cape. Let us discard the editorial we. Just across the river from Providence is Seekonk, where, I recalled, the former Mildred Wheeler, now Mrs. Harold F. Thompson, was living. But on inquiry I found their scientific farm many miles to the rear, and we regretfully drove on. We turned in at Marion and drew up to the Sippican, where '05 celebrated its Twentieth Reunion. The house was pretty well fixed up for the winter, but mine host Kokerda was still there. He asked after Charlie Boggs and some of the others of the Class, and hoped that he would entertain us at our next reunion. It was a lovely warm fall day, and we sat for awhile on the dock by the casino. After spending the night at Provincetown, I renewed acquaintance with Chatham where I had spent a few weeks at the age of three. Nothing was the same. Even one of the twin lights had gone. We stopped at East Bay Lodge where we "reunited" in 1923, but it was thoroughly closed and nobody answered the bell. We drove around by West Bay Inn which did not look familiar, as I had never been there before. On the way to Boston we stopped at Sid Strickland's summer home in Plymouth, remembered by those who went to the East Bay Lodge reunion. He had not arrived from town, but I spotted him a few minutes later driving through the main street of Plymouth. Next morning, which was Sunday, I ran into Tom and Mrs. Esterbrook of Portland on the sidewalk in front of the Statler. Tom was combining business with a symphony concert.

We have finally heard from Jim Barlow. He left New London something over a year ago for New York to go into the development of an electric refrigerator. He says that the progress has been slower than expected, which is the usual story.

On November 1, John Damon joined the staff of Jackson and Moreland, Consulting Electrical Engineers, Park Square Building,

Boston, where he will be associated, among others, with Frank Carhart. Damon has been for about three years with the American Brass Company, Waterbury, Conn., in an advisory electrical capacity, where his previous power plant and transmission line experience was of value to the company in its handling of copper and alloys for electrical purposes. Previously he was with Stone and Webster in Boston. He is living at 41 Pilgrim Road, Boston. To celebrate his retirement from the Brass Company, Damon had a rather severe intestinal disorder and completed the celebration by staying several weeks in a Middletown hospital. He did not, however, tell us anything about it until the day before he left. He starts on his new job apparently in good health.

The collector of Class Notes usually seems to be in difficulty in the December number of *The Review*, but in years past he has somehow got his second wind and with some help has been able to pull through the year. Perhaps it will work that way again. — ROSWELL DAVIS, *Secretary*, Wes Station, Middletown, Conn. S. T. STRICKLAND, *Assistant Secretary*, 20 Newbury Street, Boston, Mass.

'07 Continuing to draw from the supply of information given on the statistic sheets that you fellows have sent in, we will give facts about a few more of the Class.

Frederick W. Amadon has stuck to civil engineering ever since leaving the Institute and is now senior civil engineer, Bureau of Valuation, Interstate Commerce Commission, having his office at 1901 D Street, N.W., Washington, D. C. He has two children. — Edwin W. Bonta, another one of our architects, is now practising under his own name after having been associated with another man up to 1925. Also he teaches architecture at Syracuse University, and writes book reviews on architecture and allied subjects for the "Literary Review." He has written several magazine articles and has lectured on Japanese architecture at various colleges, including Technology and Harvard. His office is 46 White Memorial Building, Syracuse, and his home is at 508 Dewitt Street in the same city, where he lives with his wife and son.

It has been a long time since we have had up-to-date news about Clarence A. Bowen. Nearly all the time since 1907 Clarence has been assistant with John A. Stevens, Engineer, in Lowell, Mass., but in 1926 he became plant engineer of all plants of the American Hide and Leather Company. He lost his first wife in 1914, but was married again, and has three children. The home address for the family is 14 Rutland Street, Lowell, Mass. — Charles R. Bragdon sent us a photograph of his family and himself which we would like to reproduce in *The Review*, but the Editors forbid any cuts in Class Notes, so you'll have to take our word for it that they make a fine looking group. Charles has followed chemistry consistently and has been chemical director of varnish works of the Ault and Wiborg Company, Cincinnati, Ohio, since 1915. He always has been a most loyal and interested Technology man and regretted exceedingly that family circumstances prevented his being at our reunion last June.

His home address is 7 Peasenhall Lane, Hyde Park, Cincinnati.

It was great to see the rekindled Technology spirit that has come to Lester W. Brock, and that was evidenced by his jolly participation in events at Cape Cod last June. Lester says that he'll never miss another Class Reunion, although this was the first one he had attended, and he came all the way from Akron, Ohio, where he is resident manager of Godfrey L. Cabot, Inc. (of Boston), carbon black manufacturers, with an office at 611 Metropolitan Building. Lester reports three children to add to the '07 total.

One of our professors is James A. Correll, who holds down the chair of electrical engineering at the University of Texas, Austin, Texas. He, like most of them, has written a book, "Alternating Current Circuits," jointly with J. M. Bryant, published by McGraw-Hill in 1925. Four daughters, ranging in age from eighteen to ten, bless the home of Correll and his wife.

Through the help of Don Robbins we located Bill Woodward, and have information from him. Bill has been among the missing on our address list for some time, and it is mighty good to know that he is assistant to the President of the Eaton Axle and Spring Company at Cleveland, Ohio. Bill is very modest about commenting on his previous and present attainments, so we can give no more facts except that he is married, has no children, and lives at 97 Lake Road, Willoughby, Ohio. — BRYANT NICHOLS, *Secretary*, 2 Rowe Street, Auburndale, Mass. HAROLD S. WILSON, *Assistant Secretary*, W. H. McElwain Company, Manchester, N. H.

'09 Mr. and Mrs. Edgar Hoyt of Mount Kisco, New York, have announced the marriage of their daughter, Louise Lawrence, to Lester H. King, on Saturday, October 8, 1927. — Laurence Winchester is building a new house in Glen Osbourne, a suburb of Pittsburgh, and as soon as it is finished will be glad to show it off to any members of the Class who pass that way.

Tom Spooner says it isn't news any more, but admits that he is the author of a book on "The Properties and Testing of Magnetic Materials" published last spring by the McGraw-Hill Company. The book is most valuable to anyone interested in magnetic materials. — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. PAUL M. WISWALL, *Assistant Secretary*, Franklin Baker Building, Hoboken, N. J. MAURICE R. SCHARFF, *Assistant Secretary*, 435 Sixth Avenue, Pittsburgh, Penna.

'10 No notes have been received by The Review Editors from the Secretaries of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to DUDLEY CLAPP, *Secretary*, 16 Martin Street, Cambridge, Mass., or to R. O. FERNANDEZ, *Assistant Secretary*, 264 West Emerson Street, Melrose, Mass.

'11 What a pleasure it is to chronicle, at the start of these notes, the arrival of two junior 1911-ers, one boy and one girl. On September 19 Stan Hartshorn, X, and his wife became the proud parents of Stanford H., Jr. at Gardner, while on October 5 at Auburn, N. Y., O. D. Powell, XI, and Mrs. Powell welcomed Louise, their second child and first daughter. From both families reports of excellent progress by mother and youngster have been received, and 1911 congratulations have been extended.

Lloyd Cooley, X, one of our champion peregrinators, if such we have, is now located with the Swenson Evaporator Company at Harvey, Ill., a suburb of Chicago. He had previously spent several months in the oil industry as a representative of E. B. Badger and Sons Company of Boston.

Response from classmates to the appeal for aid in the Alumni Dormitory Fund has been rather disappointing, particularly because the amount which has been donated or pledged has come from a small percentage of the members. Please support this worthy cause, even though your contribution is of necessity not a large one. We want 100 per cent representation on the list of donors and, of course, no individual list of donors published will include individual amounts given. On the other hand, the response to recent bills for biennial class dues has been remarkably brisk, which is, of course, pleasing.

In mid-October Mrs. Denison accompanied me on a motor trip to Montreal, our trip up being through New Hampshire and Vermont, with the return trip through the Adirondacks and the Mohawk Trail. The glorious autumn colors combined with a rousing welcome by members of the local clubs at Montreal and Pittsfield, both of which cities we spent some time in, made the trip memorable and delightfully enjoyable.

In Montreal it was great to renew acquaintance with Professor Augustin Frigon, VI, who is now general director of technical education for the Province of Quebec and Dean of L'Ecole Polytechnique in Montreal. Another Course VI man with whom it was delightful to renew acquaintance was Bill Pead, who is prominent in the gas division of the Montreal Light, Heat and Power Company. With regret I learned that T. J. Lafreniere, XI, chief sanitary engineer of the Board of Health of the Province, was out of town until the last of October. Enjoyable alumni dinners were held in Montreal and also in Pittsfield, although in the latter city I saw no 1911 men, as Paul Cushman, VI, was away. —Our heartiest good wishes to Bob Haslam, X, who is now in New York in charge of chemical engineering development work for the Standard Oil Development Company.

By the time these notes appear we undoubtedly will have had our usual 1911 get-together at Walker Memorial on Armistice Day, the eleventh day of the eleventh month. Details in the next set of notes, and remember you have to write to Dennie in order to have Dennie write to you in these columns. —ORVILLE B. DENISON, *Secretary*, Room 3-207, M.I.T., Cambridge, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

'12 After our big start in the November issue, and our ambitious plans for the future of these Class Notes, we go to press with little or nothing but regrets at the scarcity of news. Shep is still in Europe as this is being written, and your Assistant Secretary has had nothing in the way of items but promises from classmates. At least we'll make Shep write an item about himself in the next issue.

The first meeting of the New York crowd this fall had only the slim attendance of five, due to the tardiness of notices of the affair. The faithful who arrived were Rhodes, Freeman, Priest, N. A. Hall and McGrath. —Clarence Morrow, IV, has joined G. E. Barrett and Company of 120 Broadway, New York, dealing in investment securities. Morrow's experience with this and former connections has been such as to make him an expert on the financing of industrial and public utility companies.

Many of you fellows are doing important work, having interesting experiences and meeting or hearing of other classmates. Why not take a few minutes today, and write us a few lines for these notes? —FREDERICK J. SHEPARD, JR., *Secretary*, 125 Walnut Street, Watertown, Mass. D. J. McGRATH, *Assistant Secretary*, McGraw-Hill Co., 10th Avenue and 36th Street, New York, N. Y.

'13 No notes have been received by The Review Editors from the Secretaries of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to HARRY D. PECK, *Secretary*, 1123 Hospital Trust Building, Providence, R. I., or to G. P. CAPEN, *Assistant Secretary*, 25 Beaumont Street, Canton, Mass.

'14 The Dormitory Fund campaign is well under way. It is too early yet, of course, to say just how much Fourteen will contribute, but it is hoped that we will cross the \$20,000 mark set for us. By the way, if your pledge card has not been sent in, will you please take care of it as soon as possible?

J. W. Horton had a very odd and unfortunate experience last summer. He was starting for a vacation in Boston and, shortly after leaving New York, noticed that the radiator of his car was warm. In stepping out to get some water, he slipped on a stone and fell, breaking his leg. The result was a rather long and unpleasant vacation back in New Jersey. To cheer him up, the Patent Office issued him Patent No. 1,641,431 on a communication system. This is just the latest of quite a list of patents on electrical subjects that have been issued to Horton.

Phil Currier has returned from a trip to South America, where he has been for the past year in the interest of the General Electric Company. His stay in the U. S. A. was very brief, and he is now touring Europe. From his appearance, South American conditions certainly agreed with Phil.

Porter Adams has been reelected President of the National Aeronautical Associa-

tion. While in Chicago during October, your Secretary met Pat, who was on his way back to Washington from a trip to the Pacific Coast. We did our best to uphold the class record at an informal Fourteen reunion. Adams extends a cordial invitation to any Fourteener visiting Washington to look him up at N. A. A. Headquarters.

Alden Waitt has been transferred from Boston to Washington. Alden is still loyal to the Chemical Warfare Service, and for the third time in his military career has been promoted to captain. He now hopes that the post-war juggling of the army is over and that there will be no more backward promotions for economy's sake. The Boston group will miss Alden greatly at the monthly luncheons this winter.

We thought that L. S. Hall, in Concord, N. H., had the Fourteen monopoly on automobile agencies, but we now learn that D. R. Dixon has the Buick agency for quite a section of Cape Cod. Don is reported to be doing a thriving business, and to be offering special inducements to Fourteeners summering on the Cape. —H. B. RICHMOND, *Secretary*, 100 Gray Street, Arlington, Mass. G. K. PERLEY, *Assistant Secretary*, 45 Hill Side Terrace, Belmont, Mass.

'15 The usual cheerful notes are somewhat dimmed this month by Jim Tobey's sorrow. His youngest son, of whom I wrote last month, died of meningitis recently. We all know what a blow this is to Jim and Mrs. Tobey. We all feel deeply for them and send our sympathy to them in their sadness.

Most of the answers already received for the Alumni Dormitory Fund enclosed checks or pledges, but the returns are slow and small. Will you all give your careful attention to this and try to give at least the average of \$45.00 per man, so we may reach our class quota?

These notes are going in just before our first Class Dinner on November 5 at the University Club, Boston. This will be reported in detail in the January issue.

On behalf of our Class, and in answer to a letter from Dr. Allan W. Rowe, I gave the Alumni Council \$50.00 for the athletic fund. Dr. Rowe writes in part: "Will you please extend the formal thanks of the Council to your Class for their generous cooperation and support, and may I add my own personal word of appreciation?" Let us individually support the dormitory drive so that the undergraduates may enjoy further some of the facilities we did not have.

Here is Jerry Caldwell's letter to Jim Tobey, to which I briefly referred in the last issue: "I received your May 3 letter when I was in Syracuse last week, and I'll certainly be at the luncheon on June 11 if I am in the city at that time. I am with Ford, Bacon and Davis, Inc., 115 Broadway, New York, and my work is on the companies that we manage and making business reports for banks and companies in which they are interested. I am out about a third of my time, and while I don't care so very much for that, the work itself is of sufficient interest to make up for the traveling that is necessary. With the exception of four years in Bridgeport, Conn., with the Columbia Phonograph Company, I have

1915 Continued

been doing this same kind of work ever since I left the state. There is one thing about it, you certainly do get familiar with a lot of Pullman car names, although that knowledge is similar to some of the courses at Technology, interesting but useless. Personally, I am married and have a son a year old who probably doubts that he has two parents, since he sees so little of me. However, I'll see him next week after I have been to Nashville and Memphis, Tenn." Sounds just like him.

From the changes in address slips sent from the Alumni Office, I note a number of our men have moved. I wonder if this always means a change in position and work. I believe the following men can give us an interesting account of themselves. We want to hear from: Howard H. Wells, Los Angeles; Edward E. Proctor, Greenwich, R. I.; Ted Spear, Rumford, Maine; Reg Pollard, Indian Orchard, Mass. (Is this a new job, Reg?); Robert P. Sherman, Santa Barbara; Andrew N. Wardle, Chicago; Ralph E. Curtis, Philadelphia; Charlie L. Hall, New York; George W. Simons, Jr., Jacksonville; David P. Rogers, Toronto; P. J. Munn, Fostoria, Ohio; Norris E. Kimball, Akron. However, I hope some one will write something for next month, as it begins to look like a hard winter for my imagination. — AZEL W. MACK, *Secretary*, 377 Marlboro Street, Boston, Mass.

'16

The problem of securing sufficient news from bashful and retiring members of the Class is still unsolved. Were it not for Bill Farthing's activities in and around New York, your Assistant Secretary's report would have been conspicuously absent. But before copy is due for the next issue about one-eighth of the Class will have received a direct appeal for news, and when you get this don't hesitate to do your part. In the meantime, if you don't get a notice, write anyway. Our news is much less accurate when it has to be a product of the imagination.

Jimmy Evans sends us, through Bill Farthing, the following, with news of every one except himself. Needless to say we are grateful, but we also want to hear in the next issue just what Jimmy is doing. "I just saw Steve Brophy. He was in a rush to get to Detroit where he was scheduled to make a speech before the Producers Council of the American Institute of Architects. Steve is in charge of the Sales Promotion work for the Anaconda Copper Company. Cy Guething was in New York recently and is going strong, pushing oil-less bearings for his company. Cy has his old-time steam, and still talks of the days at the Lenox. Moose Jewett was seen once in Buffalo. He reports that plant engineer's job of the Larkin Company, plus a seat on their board. He showed a snappy Wills St. Claire and a raccoon greatcoat. Oh yes, and the mustachio. Dutch Gaus has just announced the arrival of a son. Dutch is eastern district sales manager of the American Well Works Corporation. He holds forth at 165 Broadway, New York. George Repetti is still with the Dorr Company as their eastern sales manager. He has three bouncing youngsters, and still appears as young and active as ever, in spite of his added responsibilities. Bill Farthing

won't let you say much about him, but his steam pressure has increased quite appreciably since the last reunion. You can't keep Bill back. His realty activities seem to be growing larger and larger. His most recent venture is the forty-four-story Arnold Constable Building in New York. Bill hasn't had much time on his hands for fishing or hunting, but he looks forward to an ever evasive next year. Harold Dodge has several inventions to his credit, including the electric stethoscope. He is connected with the Western Electric Company. Jeff Gfroerer is field representative for Graham Brothers. He is seen in and about New York occasionally. He is pounds heavier and hairs less than he was while a student. We often wonder what has happened to Bud Curtis, Obie Pyle, Fat Rennie, Ken Sully, Nelson McRae, Bob Crosby, Ira Crowell, Abe Reeve, and Knight Owen. Perhaps some one can unearth some real news about them."

Bill Farthing reports that Walt Binger has joined forces with the R. H. Howes Construction Company, and is now Vice-President of this concern. Bill has also seen Ralph Fletcher, who was in New York for the World Series. Ralph presumably still holds forth at Lowell. Jack Burbank, who is located in or near New York, has been successfully raising funds to assist two deserving boys through Technology. If any of you are interested in this sort of work, Jack can show you where to place your money to advantage. Tom Holden has recently published an article regarding the automotive, electrical and building industries. Unfortunately Bill didn't tell us where the article appeared.

In Detroit the same group of 1916 men hold the same jobs. About the only change has been Gfroerer's move to New York last year. We hesitate to mention that for every time we have reported one of Jeff's jobs with Dodge Brothers, he seems to get a better one with the same concern before our news gets into print. Fred Hine, Milton Pettibone, Phil Baker, Howard Foster, Ullman and your Assistant Secretary make up the group here.

And for next month let's have some news from you. — RUSSELL H. WHITE, *Secretary*, Kardex-Rand Sales Corporation, 118 Federal Street, Boston, Mass. CHARLES W. LOOMIS, *Assistant Secretary*, 7338 Woodward Avenue, Detroit, Mich.

'17

"Dr. Barnett F. Dodge Beside his Bomb Proof Cage," is the caption of a picture in the *Yale Scientific Magazine*.

We hope the picture is never published without the full story; there is a temptation to look for an insert "convict number 496." It seems that Barney is preparing to compress gases to the enormous pressure of 15,000 pounds per square something or other (details not given). The "potential bombs," the size of a twelve-inch shell, will contain hydrogen and carbon monoxide, to be passed over a catalyst in an effort to secure liquid products for fuels and solvents.

Once again Professor Locke keeps us advised of the good fortune of one of his protégées. A daughter, Natalie, joined I. E. Waechter's family at Springfield, Ill., on September 7.

Harry N. Sandell has incorporated with his associate as Travers-Sandell, Inc., Water-

proofing Engineers and Contractors, with offices at 238 Main Street, Kendall Square, Cambridge.

The brevity of this month's notes may induce action from Bill Eddy, Dick Whitney, or some other traveled gentleman and occasional contributor. — RAYMOND S. STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass.

'18

Unless the fellows come through with more news than they have this past month we will find ourselves out in the cold for space in The Review I fear. Not a word has been received from any member of the Class by the last Secretary or myself during the past month. I cannot make up stories about my classmates "out of whole cloth" that will be satisfactory to them.

Fellows, please come across with news and I will be glad to keep up our section in The Review. Let's have lots of news for the January number and all others from then on.

Remember, only a few months now and we will be having our Reunion and everybody wants to be saving their pennies so they can attend that wherever it may be. No news on that subject until later. — GRETCHEN A. PALMER, *Secretary*, 148 State Street, Boston, Mass.

'19

When in the course of our busy career it becomes necessary to supply material for The Review, your Secretary, for some reason, is always consulted and expected to furnish an inexhaustible supply of information regarding the where- and what-abouts of members of our Class. Being somewhat of a poor correspondent, as you all know, he finds himself lacking a fertile imagination, hence the absence of notes.

But just let me say, however, that Mr. and Mrs. Balmforth announce the marriage of their daughter, Lillian, to Ken Wood on Saturday, October 8, at Nashua, N. H. Ken, I believe, is still with the Dennison Company in Framingham. — Mr. and Mrs. A. Prescott Folwell announce the marriage of their daughter, Helen Mary, to Frederick Rasmussen on Saturday, August 20, at Montclair, N. J. — We also have news of the marriage in July of Israel Maizlish, now a professor of mathematics and physics at Centenary College, to Miss Yetta Velinsky at Shreveport, La. — Art Blake, after profuse and extensive ponderings, has sailed away to Bermuda with his bride, Miss Marion Rhodes Sawyer. Art was married in New York on October 18.

Ev Doten has been spending a few days around Boston. Ev came East in his car from Detroit where he is representing the Stedman Products Company. He is Secretary of the Technology Club of Detroit. Herman is the only other active '19 man in that vicinity, and Ev invites any '19 men who may wander in that vicinity to be sure and look him up.

Reports of the Class Reunion in New York in June have been lost in the mails, but I understand that a good number of men were out, and they all had the usual good time attending the All-Technology functions and a special Class Luncheon. — PAUL F. SWASEY, *Secretary*, 99 Washington Street, Boston, Mass.

'20 No notes have been received by The Review Editors from the Secretary of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to HAROLD BUGBEE, *Secretary*, 9 Chandler Road, West Medford, Mass.

'21 Shortly after you read this Santa Claus will appear in your midst, but the real joy comes in giving, so give a few minutes to 1921 and send in a Christmas note now.

H. A. Greenwald, II, is an engineer with the Whitehead Refrigeration Company in Detroit, and he lives in Webster Hall — so Stewie Nixon, XV, told us. — At the home of John T. Rule, XV, there arrived a second boy on September 9. Everyone is well, happy, and more proud. Congratulations!

Harold Cake, VI-A, wrote *The Tech* some time ago from Portland, Ore., saying "Bill Mathews, VI-A, and I often wonder if Professor Timbie is still running his Paige. If he is it is due to the fact that Bill and Ted Rose, VI-A, overhauled it and took four and one-half revolutions of play out of the rear end. I see Bill Mathews quite often. He is coast representative for the Miller Company, a General Electric organization, and is 'getting along finely although it keeps him busy getting up and down 1,700 miles of coast.'"

Sumner Hayward, X, is with the New York Telephone Company at 140 West Street, New York. Sumner said he saw Frank Huggins, X, quite some time ago in Buffalo, where he was working for the Sowers Manufacturing Company. Frank was married a long while ago, and they have a boy, Thomas Hill Huggins. Sumner wrote that Frank "had a mighty nice home of his own, and had become a first-class plumber, carpenter, painter, and so on, in things he had done around the house." He also said that Carl Cohen, X, is assistant patent attorney for the Radio Corporation of America in New York and that Jerry Collins, II, is progressing in fine shape with the New York Steam Supply Company.

From Webster, Mass., Anne Rosenthal Kaplan (Mrs. E. Berton), IV, writes: "My own desire to hear about the other '21 men prompts me to add my bit of news to the information you seek. First of all, just five years ago while I was completing my year at Radcliffe, after leaving Technology, I married a very nice Harvard '22 man, and we both received our degrees that June. Outside of various differences of opinion regarding the respective differences of Harvard and Technology men we are a model married pair. We are living in Webster, just sixteen miles out of Worcester, and we manage to intrigue many of our former Technology associates for week ends. We can boast of two excellent country clubs, a spry German police dog, a Persian cat, and a wine closet. I have painted a series of Japanese pictures, reproductions from the original collection at the Worcester Museum, and dab about at intervals in a studio at the top of the house. Then town clubs, and three University Clubs at Wor-

cester, as well as educational work for local girls, keeps me busy. We get to New York often, and every summer to Washington and Tennessee, where we visit older classes of M. I. T. and associate Harvard friends. The only resident Technology man I have seen at Webster was living in my present home. I came to inspect the house, before signing on the dotted line, and saw a huge Technology banner over the baby's crib. This man was of 1916 vintage, and showed his engineering shrewdness by removing the battery from the front door bell when he moved. If the same said person reads The Review notes, I wish he would send for a pile of ashes he forgot to take with him."

Jackson W. Kendall, XV, bought and moved into a little home at 67 North Raymond Avenue, Pasadena, Calif. Jack wrote: "I was listening in the other night, when I heard a very familiar song about a bunch of little 'Bucks' from 'Timbuctoo.' I made the remark that it must be a chap I knew at the Institute, named Frank Gage. Sure enough, when the name was announced I found I was right. He and his wife came over and called on us. I understand they are living at 226 East Olive Street, Huntington Park." As you know Jack is one of all trades, specializing in real estate, moving, storage, and so on.

Thomas J. Homer, Jr., I, wrote some time ago that he was learning the design of sash operating with a view to being a sales representative for Lord and Burnham Company, Irvington-on-Hudson, New York, which concerns manufactures greenhouses, and has recently gone into the sash operating business. Homer writes that "Charles Longfellow, Jr., VI-A, joined the research and development department of the American Tel. and Tel. Company at 195 Broadway, New York, upon graduating. He was with them until September, 1926, when, due to poor health, he went to a camp in the Adirondacks. His health became worse and he died in a hospital in Utica in November, 1926."

George E. Shoemaker, VI, 3727 Chestnut Street, Philadelphia, writes: "Putting in half a year continuing my education abroad, and at the same time working as a consulting engineer to a sort of League of Nations of a part of the electrical industry of Europe, headquarters at Geneva, makes the time pass very pleasantly." — R. A. ST. LAURENT, *Secretary*, 431 Oliver Street, Whiting, Ind. CAROLE A. CLARKE, *Assistant Secretary*, Research Department, Victor Talking Machine Company, Camden, N. J.

'22 No one was more surprised than your General Secretary at being impressed, during the course of the reunion now lamentably belonging to the ages, into another term of the secretariat. He came to the affair prepared modestly to lay down his burden and thereafter to become the secretarial analogue of the Ford Model T, an old machine to be put on the scrap heap in favor of a brand-new secretary with three-speed selective transmission, four-wheel brakes, balloon tires, gas filter, air washer, oil cleaner and windshield wiper — particularly the windshield wiper. The fact that none of this happened and that the nominating committee in its befuddlement somehow seemed to get the old Secretary and the new Secretary all

mixed up is a tribute to the nepenthe supplied by the Power Committee and by Bill. Those who attended the affair will know what is meant. Others do not deserve to know. The Secretary himself does not yet quite recall how it all happened, although he can remember making a speech intended to be eloquent but lacking sadly in prepositions, articles, adjectival modifiers and other parts of speech usually thought necessary to well-rounded utterance. It was, however, devastatingly earnest, and apparently during the course of it he accepted the accolade. So much for history.

In view of all this, it is particularly regrettable that the first number of The Review this fall went by with, for the first time in five years, nothing but a great gaping crater in the space usually allotted to Notes from the Class of 1922. The Secretariat can only plead that the affair of last June was, as has been hinted, quite an affair, and that neither he nor any of the loyal and hard-working Course Secretaries had quite got back to normality in time to catch the November Review. After all, notes were due for this issue only three months after the reunion was over and for such a three days, three months is all too short for a complete restoration of the vestibular system.

And now another complication has taken place. Being henceforth on the outside of The Review management looking in, the Secretary receives a copy notice wherein his successor gives vent to the following remarkable dictum: "Please refrain from lengthy, verbose introductions and conclusions. Class Notes are continually growing in volume and in order to publish all of them it is necessary that they be as concise and unembellished as is commensurate with readability and good writing." Since it has always seemed that the function of a general secretary was solely to supply lengthy, verbose introductions and conclusions, it looks a bit as if The Review management had legislated him out of existence. If, in consequence, you have not read any of the sentences above, you will understand that they were not printed.

In these columns, at the moment, set as they are in a narrower measure than heretofore, no serious attempt will be made to chronicle the events of last June. A separate volume must suffice for them and it may be authoritatively stated that Class-President and Director-of-the-Deficit, Henry J. Horn, Jr., late Field Secretary and Reunion Entrepreneur, promises that this volume will be issued to all members as a Christmas gift. Those of longer memory will recall that it was promised earlier, but the technicalities and expenses of steel engraving, photogravure in five colors, the cutting of a new font of type worthy of its task and a few other complications like this have of necessity delayed the appearance of the work. If the Oxford Dictionary can take twenty years to get through the letter "I," we see no reason why a delay of a mere month or so should bother the members of the Class who want to read of their reunion in a form properly set forth and embellished. It is sufficient now to say that the affair is one which was never before duplicated in history and will never be again. Upward of 175 members of the Class (the total increased every time Chairman Horn

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dropped in to see Bill for a moment) attended at one time or another and in one way or another. The party, from the moment when the first enraptured gentleman of '22 arrived, until the priceless instant when the last remains of your committee composed of Director Horn, the Secretary, and Minister without Portfolio, Roscoe E. Sherbrook, departed about 5 P.M. on Sunday, June 19, trailing clouds of glory and issuing strains of the Stein Song with what remained of their voices (this act was greatly enjoyed by the help), was the most spectacular success visible in the history of Technology class reunions. We have Mr. Denison's word for this and, although we have his word for a good deal else in the bargain, we do think that this time he hit the nail on the head. Weather was fair, all entertainment features turned out as planned, the site of the Mayflower Hotel in Falmouth was pluperfect and Bill himself a genius. The heavens smiled; occasionally they laughed out loud.

So wait, we pray you, for a little while to learn more of these matters. A new secretarial organization to replace the dead and mortally wounded is now being formed and you will hear more from these gentlemen as months go on. We refer you below to the continuing activities of the Messrs. Pratt and Blanchard. For ourself let us present a vital statistic or so. . . . The marriage of Miss Estelle Marguerite Cummings to Latimer Farrington Hickernell took place in Jackson, Mich., on October 24. . . . Elizabeth Willson Wray and Thomas Madison Taylor were married on September 3 in Rochester, N. Y. . . . Kathryn Ann Waters and Hugh Douglas MacDonald were married in Newark, N. J., on September 1, and will reside hereafter at 364 High Street, Orange, N. J., where, says MacDonald, "Please tell the fellows that my wife and I shall be glad to see any of them at our home should they be in this section." . . . Then there is Walter J. Hamburger, who was married on September 12 to Miss Janet Lambert in New York, and we insist on completing Walter's record in these columns despite his savage insistence that he belongs with the Class of 1921. . . . Further comes the happy announcement from Mr. and Mrs. Coleman Carven that Mary Therese was born on July 24. . . . The marriage of Laura Castle Aitken to Robert Hall Brown occurred on October 11 in Charlotte, N. C. . . . To all of these the Class offers its sincerest congratulations.

Through Professor Locke we learn that E. L. Johansen reports that he is unable to resist the lure of aviation and is going back on June 15 as Executive Officer of the U. S. Naval Reserve Aviation Unit at Great Lakes, Ill. Says the epigrammatic Professor Locke, "It might be noted, incidentally, that in going into the air he is traveling in just the opposite direction from most of the graduates of Course III who go down into the ground." Heh, heh.

To show that, if we cannot refrain from a lengthy, verbose introduction, we can at least be rigorous about lengthy, verbose conclusions, we will now pass on to the contributions of two course secretaries, postponing further chronicles until next time. Please note our new address. — ERIC HODGINS, *General Secretary*, 8 Arlington Street, Boston, Mass.

COURSE VI

A typed shaking from Eric today for the purpose of announcing the open season on winter sports, among which is Course VI Notes, is hereby acknowledged. In addition to the duties of meeting copy dates he begs to report complete recovery from his Five-Year Reunion and challenges your scribe to produce similar evidence by forwarding printable Course VI notes. This effort must not fail and is presented with the hope that it will meet with better success than the acceptance of his last challenge, the first night of the Reunion.

The general aspects of the Reunion will no doubt be covered later. Just a few high spots peculiar to Course VI men: Don Knight of the General Electric Boston office was there. Don held down a bridge game when he wasn't holding down anything else. Don, with your scribe as a handicap, won second place in the three-legged race of the inter-course meet. And now that he is under the spotlight of the printed page his invaluable assistance in applying high voltages to the reunion publicity is publicly acknowledged.

George Ericson was one of the pleasant surprises that we were not expecting but he decided to put in an appearance at the last minute. He has already decided to be present in 1932. Parker Appel, five years after, bore little resemblance to the 105-pound Cleo of Tech Show. Anyway Parker's enthusiasm was there — and the acting, too.

Dewey Goddard didn't miss a trick, but Danny Coogan did. Ask Danny if he has cashed his checks yet. With practically the entire outstanding notes of the bank in his possession he was seen dropping them into a mail box just previous to the closing of the bank. Perhaps he acted on the advice of counsel, Joe Cook and Tommy Williams. Paul Nash missed this little scene as also did Fully Webster. They were present but a short time. Fully's increased waist measure was both physical and well deserved pride. Mrs. Webster presented Fully with a baby boy as a justifiable reunion gift the day previous. — Fergie Ferguson was there, disguised with a mustache. He is now with the Robertson Cataract Company of Buffalo, N. Y. What a licking the Falmouth tennis courts took from Fergie!

The traveling salesmen were represented by Hal Metcalf now of the W. T. Grant chain stores. He concentrates on store fixtures, and can be found anywhere in the United States or 455 7th Avenue, New York. — I have suspected that Earl Thomas was married. This is true. He was married on October 1922 to Alva C. Perry of Cambridge. They live at 222 Castle Road, Palisades Park, N. J. In his position of engineer of transmission and distribution of the United Electric and Power Company he often sees Edgar Dean.

The division supervisor of foreign wire relations of the Chesapeake and Potomac Telephone Co. was also present. He is Van Van Pelt, Jr., and can be reached at 406 Morrison Building, Charleston, W. Va. Van was probably the greatest distance hiker to the reunion for Course VI. He said he will do it again in 1932.

Ed Vilett of New Jersey Public Service Corporation fame was instrumental in getting

some of the New York gang to the Reunion. He was also instrumental in having a good time with the rest of us. Larry Coddling, Don Walsh, and Eacker were likewise present.

We all looked forward to seeing Phil Alden but when the date arrived Phil was busy honeymooning. On June 4 he married Emma L. Snow of Cincinnati, Ohio. Another benedict of the past summer was Ed Norton. He was kind enough to send an announcement to me, even though I am unkind enough to have mislaid it now that I want to broadcast the details. We will look forward to seeing the foursome at some future reunion.

The above nineteen, excepting Phil and Ed gave Course II a close run for the greatest number present for any course. Course II's generous distribution of their prize was, however, consoling. All had the good time that Heinie promised, and need only his beck and call to return in 1932. — FEARING PRATT, *Secretary*, 120 Main Street, Hingham, Mass.

COURSE XIII

The summers, falls, winters and springs pass far too quickly. Before we know it all the boys, a little older, a little more gray, will be anticipating a Ten Year Reunion. As Secretary of the old drawing room gang the writer seems to have been somewhat of a flat tire this summer, but the office has now provided me with one of those stenographers (made, by the Grace of God, at the Dictaphone factory), and I may now be better able to get my mind on my work. But seriously, if there is any one in this group who feels that he can conduct this job of Secretary, I wish he would raise his right hand. I am weary after, lo, these five years.

Let's call the roll. Eddie Morse: no dope. Ward Shearer: right near by in the Farmers' Loan and Trust Company, becoming, I take it, an investment counsellor of no inferior order. Howe: and how! Bowers: called to see me Monday. He has valves for sale, Mr. Lunkenheimer's very best. Married — no. Schoenherr: not heard from. Don Bixler: lives over on Eighth Avenue with Stanley Champion. Personally supervises the excavation of the new subway and is said to be a chemical engineer of high proof. Married — no. Bernard: Says there is nothing to this married stuff. Travels for Worthington now.

Wendell Sammet: who knows? Charles Chase: ditto. Donald Marsh: is understood to be now pursuing those duties for which he is best suited by virtue of training and experience. He is at Newport News; he high-hatted me when in New York last. Wallace Dove: information lacking. Greenwood: nothing recent. De Raynier: has anybody any dope on this young man? Don Warner: strangely missing. Joe Keenan: an ominous silence from Schenectady. Does it portend new and startling theories of thermodynamics? Winslow: understood to be with the Old Colony Trust Company in the investment department. If any of you boys ever have any money to invest you won't have to consult strangers as to how to lose it quickly. Newhall: does any one know where Dizzy is? George Maling: we all received your card, and wish you well. When are you going to step off? Blanchard: nothing of moment to report, except, at this point, an intense

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yearning to be up and moving. — C. FORD BLANCHARD, *Secretary*, Moody's Investors' Service, 35 Nassau Street, New York, N. Y.

'23 Since the November notes went to press our Class Athletic Fund has swelled to the extent of several dollars, but the donors, for the most part, failed to enlighten us as to their own activities, social, political, professional, and so on. Those of you who are still waiting for the bank balance to rise high enough so that a check drawn for fifty cents or so will not be returned with "No Funds" written across its face, just remember we want a little personal dope about you even more than the money.

The number of news items this month is much below par for some reason or other. Possibly the Gensec has not kept his nose to the secretarial grindstone as much as he should have; on the other hand it would help out a lot if you fellows would write in once in a while.

On a recent trip to Portland, Maine, we took occasion to look up Johnny Gegan. Johnny is still a telephone man and recently annexed the title of division commercial engineer for the State of Maine. He seems to be bearing up well under it and is even putting on weight. — Occasionally when in town we meet Si Rice, who has forsaken his chosen profession and is now a graduate student at that institution of higher learning, Harvard University. Yes, it was quite a shock when we first heard about it, but Ricey seems to be getting along real well and furthermore he likes it. He is specializing in psychology.

We received word from Bert McKittrick last August that he had just become the proud father of a youngster, Robert Allen. Mac claims that the boy is a wonder and that he looks like the old man. We don't see how this can be, but perhaps it is so.

During the summer the engagement of Miss Lucille Fish of Canton, Mass., and Kitty Kattwinkle was announced. Miss Fish is a 1923 graduate of Wheaton College. They expect to be married next June. Meanwhile Kitty is pursuing his second year of study at the Harvard Medical School.

Forrest Harmon announces a change of address to United States Steel Products Company, Russ Building, San Francisco. Same city, same firm, but a different location. — Charlie Oon writes from Singapore: "I have been back here since July, 1926, and in September of that year joined the firm of Tan Kah Kee and Company, Merchants, in the Rubber Manufacturing Department as development manager. I hope to stay in this capacity for some time, as I married my boss's daughter last January." Congratulations, Charlie!

The following was received from Al Pyle, Course VI Secretary: "Jim Evans has won another degree, that attached to the state of marriage. On October 3, Jim and Miss Anna P. Hopper were united in marriage in New York and are now living at 591 Washington Street, Brookline, Mass. We all join in congratulations, Jim! — Tom Rounds, Walter Bricker and Bill Sturdy, '24, spent two weeks last summer in camp at Fort Monmouth, N. J. Captain Ranger, '11, inventor of the phototelegraph, fascinated the boys with an account of his work. Rod Geotchius is

becoming a national figure in the transmission of pictures by wire. Recently he completed a trip to Boston, Cleveland, Atlanta, and St. Louis, setting up picture transmission stations. Rod dug up Kilburn Smith in Chicago and found him well satisfied with that piece of the earth's crust. — C. F. Woodbury is working for the Western Union in New York, is successfully married and living on Staten Island."

I just received a note from Bondy who is in Chicago on a business trip. He says: "I met Jack Storm in Detroit, and a day or two after that we rounded up three other '23 men for lunch. There was Jack, who is with the Carborundum Company, and Paul Brown, a competitor of his, selling grindstones for the Norton Company, J. H. Little, who is with the research laboratories of the General Motors, and Henderson, who was in Detroit for a few days from Chicago. In Ann Arbor I located Wayne McMeans, who used to work with me on *The Tech*, and we spent a pleasant evening together. Mac showed me the town, including the new stadium of the University of Michigan, which will hold some 86,000 people. At Battle Creek I was able to find Pete Pratt, who has just returned from his wedding trip. Pete is working on special production problems under the superintendent of the Postum Company and says he likes the work very much."

Well, the files are exhausted, so we will have to terminate our notes right here, but before closing just let us say that plans are now getting under way for the best Five Year Reunion ever held. Keep this in mind and let nothing keep you away next June. — ROBERT E. HENDRIE, *Secretary*, 12 Newton Street, Cambridge, Mass. H. L. BOND, *Assistant Secretary*, 18 Greenwood Avenue, Hyde Park, Mass.

'24 This month I am convinced that some of the Class are maintaining a silence so strong that not even the diligent Course Secretaries can obtain information. Last month there seemed to be such a condition existing, but this month when only one secretary was able to send in notes, the whisper of such a condition last month now becomes a veritable shout. All of you in this now not so glorious Class, kindly open up and at least send in your latest address.

I have a few notes gleaned here and there. Frank Warren, who has been working for the General Petroleum Company in California ever since graduation, was obliged to return home to North Adams on account of the ill health of his father. In California he had all kinds of experience in the oil fields, including considerable construction work. Just now California oil conditions are rather quiet due to the flood of Oklahoma oil. His future plans are uncertain, although he expects to remain around New England for some time. *Radio Broadcast* for October carried a story about an amateur photo transmission scheme developed by Austin G. Cooley. The story tells about Cooley's development, mentioning that his interest in radio led to his leaving the Institute with a Vote 10 in his Senior year. The Boston *Evening Transcript* for October 8 announces the marriage of Miss Dorothy Leland Dewing, a graduate of Wellesley, '24,

and a resident of Arlington, to Edward Battey, Jr.

Your Secretary has also received a couple of letters from classmates. One comes from Ed Hanley, who is now at 109 Hegeman Street, Schenectady, N. Y. He graduated from the Harvard Business School in June, and after a vacation started in on the factory training course of the General Electric Company, so that he is still going to school, after most of us have been working for more than three years. Just now he is working in the radio department, but his course is so arranged that he doesn't spend any great length of time in one department. He is the Assistant Secretary of Course II, and states that he has lost track of most of the gang. Will a few of you write so we can have some notes?

My other letter was from Jack Walthall, a member of my own Course (XIV), who wrote from Spain. His address is care of Aluminio Espanol, Sabinanigo, Prov. de Huesco, Spain. He was previously in Bading, N. C., with the Aluminum Company of America, but went to Spain in June to help start a new aluminum factory which is just being built. He expects to be there until the first of December, but he did not tell me what his further activity would be. Every one in that section speaks only French or Spanish, and he characterizes the country as being "mountains in front and mountains behind you." He was fortunate in being able to get his work enough ahead so that he could take a little vacation in Barcelona, which approaches our modern cities and where an occasional person is understandable. — H. G. DONOVAN, *General Secretary*, 775 Asylum Avenue, Hartford, Conn.

COURSE XV

Still firmly rooted in Boston, your Secretary seems to be cut off entirely from communication with the outside world. Even those of his classmates who are inmates of this citadel of censorship are seldom visible in the daytime, or any other time. Some of you who have been able to penetrate the barriers have departed as you came, as fleeting puffs of smoke. However, we shall live and hope — for better days.

We have just talked with Dave Evans, who, as he puts it, is merely stopping off here en route for Northampton, which remark places us right back where we left off three or more years ago. Ah well, we fear our silvery locks and portly form would not be welcome in Northampton today. — We see Carl Bartow occasionally. He is now with the Underwriters' Laboratories at 40 Central Street. — Dick Holt is enjoying his work with C. H. Tenney here in Boston. — Course VI has its share of representatives here, and we have a glimpse now and then of Frank Barrett with the New England Tel. and Tel. Co., Chick Kane with the Edison Company, Mal MacNaught with Hixon Electric Company, and Latham with Curtis Lighting, Inc. The Tuesday Technology Luncheons at the University Club have proved popular, but have drawn only a few from 1924. If any of you are in the vicinity on a Tuesday, be sure to come to the main dining room at the Club. Always something doing, 12.30 to 2.30.

Our greatest pleasure at this time is our opportunity of announcing the marriage of

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our friend and distinguished classmate, Purinton Fay Marrs, to Miss Marjorie Harrison, Sargent, 1922. The event occurred Saturday evening, September 24, and your Secretary was fortunate in being able to attend. Duke is with the Dennison Manufacturing Company in Framingham, and Mr. and Mrs. Marrs are residing at 404 Franklin Street, that city. We take this occasion to wish them both all the success and happiness they deserve.

The George Swartz Medal for 1926-27 was presented to Frederick D. Riley, Jr., '28, at the Annual Undergraduate Smoker held October 7 at Walker Memorial. — Quirin, Lehman and Ludwig have been recent visitors at the Institute. — Mel Wagner is doing landscape architecture with the Auburndale Nurseries. — We have learned that Kurzman is with B. Altman and Company in New York. — Joffre is active with the S. I. E. there. — Bill Rosenwald is back in Chicago with Sears, Roebuck and Company. — We were very much pleased to receive a card this summer from Mr. and Mrs. Clarence M. Cornish, announcing the arrival of Clarence M. Cornish, Jr., on May 23. Great, Nish! We also wish to acknowledge the receipt of an interesting letter and prospectus from Gordon Billard, who is with Lage and Company, 160 Broadway, New York. In about ten years, Gordon, we may be able to take you up on that. — Don't forget, gang, your Secretary is lonesome. — JOHN O. HOLDEN, *Secretary*, 110 Monroe Road, Quincy, Mass.

'25 Al Thatcher took a trip to his home in London, England, this summer. He seems to have spent most of his time in wiring the house for electric lights. Some time after Al got back to this country he phoned me to let me know that he married Miss Lucile Watson, Stilwell, an American girl, on September 29. — Ronald A. Mitchell, XV, married Miss Ruth Bates of Springfield, Mass. After the ceremony, the couple left on a motor trip of several weeks. They will make their home in Stafford, Conn., where Mitchell is associated with his father in the Cyril Johnson Woolen Company.

Tod Defoe, IX-B, is assistant to the Vice-President of the Atlantic Aircraft Corporation, Hasbrook Heights, N. J. We haven't seen Tod for some time, so he must be quite busy. — Rick Wheeler, VI-C, in spite of his wife's objections, has acquired an attractive stenographer on his job with the New York Telephone Company. — W. O. M. Schirmer, VI, is doing sales service work in the New York City office of the Brown Instrument Company of Philadelphia. He has recently undergone an operation for appendicitis, but is now at home and doing nicely. — Alva Morgan, VI, is now living at 98 Monroe Street, Brooklyn, N. Y. The Morgans have a young son about a year old.

Wheeler-Cowan-Parkinson-Preston and Company are now living at 77 Irving Place, New York, the old Canteen Club having taken their former apartment. — FRANK W. PRESTON, *General Secretary*, 17 Gramercy Park, New York, N. Y.

COURSE I

I had pretty good luck with the requests for letters this month — two answers out of

four sent. The first is from Riegel, writing on the stationery of Stevens Walden-Worcester, Inc., Worcester, Mass., as follows: "Back to the land of two dollar bills. I am now advertising manager for Stevens Walden-Worcester. We build all sorts of wrenches and small tools for garages. Some of them, I believe, are tricky enough to take the kinks out of cars such as Honey Storrs and other prosperous members of the Class are likely to be driving. Wrenches are a long way from hydro-electric engineering, but there's nothing like variety."

"Mike O'Brien reports from Berlin that 'the beer is fine.' — Honey Storrs was last heard of installing a gear cutting department for Hartford Special Machinery Company, Hartford, Conn."

Fred Rice is responsible for the other letter. He is located at Cobble Mountain Reservoir, Westfield, Mass., and here is what he has to say: "The beginning of the school year in the fall of 1925 found me once again in Building One, this time as an assistant in the department and located in Professor Barrows' office. I stayed at the Institute for the school year and then, feeling the call of the great out-of-doors, I took a position with the Springfield Water Works as a chief of party. I am located in a camp about nine miles west of Westfield. The particular job with which I am connected is a new water supply reservoir project on the Little River."

So much for the letters. There isn't much else. I met McLaughlin in the North Station recently. He is still with the Boston and Maine. Harmantas got sick of it, however, and decided to go back to school. Max Glickman didn't like railroading either, and he is back in New York working for the Port Authority. Olsen is still with McClintic-Marshall and he is located somewhere near Pittsburgh. All of this comes from Mac. He generally has some news.

Herb Pierce's latest address is Mutual Fruit Company, Panama City, R. P., and there are no signs of his settling down yet. — HAROLD U. ROBICHAU, *Secretary*, 28 Bow Street, Beverly, Mass.

COURSES III AND XII

In turning over the course secretaryship to me, Gordon Creveling informs me that he is still located at Pilaes de Nacozasi, Sonora, Mexico. After serving twelve months as an engineer with his company he returned from his vacation to become the assistant geologist with the same concern.

Through Professor Charles E. Locke I heard that during the past summer E. B. Jennings was married to Miss Virginia Griffith of Salt Lake City. Almost immediately after his marriage he had to leave on a rather extended trip through Northern California, where he has run across some rather interesting and promising zinc prospects. He says that this is proving to be a very welcome change from the Arizona desert, as the temperature rarely gets above 100 degrees Fahrenheit, and the little streams contain water instead of rattlesnakes. Jennings left the Arizona deserts early last spring and located for a while at Santa Monica, Calif., where he was mapping oil structures with the aid of and on airplane photographs, with the Fairchild Aerial Survey

Company. He reports that this work was extremely interesting. Upon the completion of this work he went to the United States Steel Company as an examination engineer, and it is with them that he is now working.

P. J. Morell announces the birth of a son, Peter Morell, on August 12, weight eight pounds. — Only a few days ago, E. L. Wildner appeared back at the Institute. He is still working for the American Steel and Wire Company at Worcester, and seems well satisfied with his position. He informs me that W. T. Brown, who is employed by the Norton Company, also of Worcester, has just recently been placed on the sales force of the company and has started out on the road for them.

A. L. Sherman, who went to the Braden Copper Company in Chile immediately after graduation in 1925, decided that two years in South America were enough for a while, and returned to the United States last winter. He worked at Jerome, Ariz., with the United Verde Company. Chile seems to have some source of attraction for him, however, and late in the spring he started back to Chile under a three-year contract with the Anglo-Chilean Consolidated Nitrate Company, and his address is now Casilla 17, Tocopilla, Chile.

T. A. McEndree, who also tried mining in South America after completing his training at the Institute, left the Andes Copper Company in Chile and returned to this country in the latter part of August. He came up from South America on the same boat with Professor Hutchinson, who was returning from a two months' trip to Peru. McEndree is at present located at Central City, Nebr.

Dr. H. T. Mann, who was appointed associate professor in charge of a new option for Course III, Petroleum Production, has been on an extensive trip during the past summer. He left here immediately after graduation last June and started an 8,000-mile tour by auto which lasted until only a short while before school opened. Dr. Mann visited the oil fields of Pennsylvania, Indiana, Illinois, Missouri and Oklahoma. While he was in Oklahoma he spent some time in the Seminole District, which is one of the newest fields and also the greatest producer in the country at the present time. From there he went through the Panhandle District of Texas, down into southeastern Texas, and there completed his tour and headed back East.

I received a surprise of my life when I returned to the Institute this fall, because I discovered that G. B. Blonsky, perhaps better known to the members of the Course as "Count," was working in our laboratories for a while. Immediately following graduation in 1925, Blonsky started for Alaska as an engineer. For two years he was working there in the preparation for the large scale dredging operation which is due to start up in the near future. During the winter of 1925-26 he secured a three months' vacation and returned to his home in Moukden, China, which he hadn't seen in four and a half years. He didn't see much of it then because, of the three months, all but three weeks were spent in traveling. Blonsky's positions and experiences have been varied and most interesting. One of the greatest hardships which he encountered seems to have been that it was

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necessary to walk thirty-two miles over the snow to see the nearest girl. Last winter he was engaged in inspecting and checking-in syphon pipe which was not a very lively job, particularly at 40° below zero and without any sunlight for two months. In the spring he worked for about a month on triangulation and then decided he had seen enough of Alaska for the present. On April 8, he left Fairbanks, Alaska, and started for San Francisco. About the first of June he left for Telluride, Colo., to take charge of gold placer prospecting for the Metals Exploration Company, operating a Keystone drill and examining about four miles of the creek just below the town of Telluride. He failed to find many prospects, so his job lasted only two months and a half. After this he started east and began working out an idea of his own conception for a concentrating table. Things seem to be working out very well, and it wouldn't be surprising to hear that the concentration of dredge products was being handled entirely by Blonsky tables before long.

As for myself, I have had a most enjoyable and instructive summer. I left Boston on May 28, bound for Tulsa, Okla., to join a company engaged in prospecting for oil by geophysical methods. After a few days in Tulsa I was sent into West Texas, very nearly to the New Mexican boundary, to work with a torsion balance party. We prospected for about five weeks, covering many miles of wilderness and visiting towns of all sorts. While out there a group of us visited the Carlsbad Cavern at Carlsbad, N. M. This cavern is a natural limestone formation and is said to rival the Mammoth Cave of Kentucky in size and beauty. After completing my prospecting field work, I returned to Tulsa, stopping off at Fort Worth for a day or so. Before I returned East I spent one day at Rogers, Ark., with I. M. Symonds. Sy is still with the Inspiration Copper Company in Arizona and seems to like it out there very much. He is also much interested in a certain young lady whose home is at Rogers but who teaches during the winter in Miami, Ariz., hence the reason for his being in Arkansas.

From Rogers I returned East to the M. I. T. Summer Mining Camp in Dover, N. J. We had a rather small camp this year, although it was an improvement over the one of a year ago. I remained there for both the course in surveying and mining practice and got back to the Institute only about two days before the beginning of the fall term. I found that M. J. Buerger is still here, now as an instructor in the Geology Department, his specialty being optical ceramics. — F. LEROY FOSTER, *Secretary*, Room 8-219, M. I. T., Cambridge, Mass.

COURSE XIV

Nothing but hearsay this month, and little enough of that. Frank Preston forwarded a couple of address changes from which I deduce that Frank Klein has just received a free ride from the Government. He has been transferred from Texas to Selfridge Field, Mt. Clemens, Mich. There is no space provided on the blank to say whether his wife is with him or not, but we assume that she is unless he writes and contradicts this statement.

My second deduction is that Theodore Coyle's greatest love is Chromium. His new employer is the Cromium Corporation of America at Waterbury, Conn. He has evidently left the position he held with the Thermit Corporation without changing the nature of his employment.

I here beg leave to announce that your Secretary is the father of a son, Colin Campbell Ware, born August 25, weight eight pounds and seven ounces. Beat that if you can! — HOLLIS F. WARE, *Secretary*, 127 Newbury Avenue, Atlantic, Mass.

'26 To der Konvergenzpunkt in the Secretarial Sanctum has come much news of late, some publishable and some not so publishable, and it might be added some perishable and some not. Many visitors, too, have dropped in to beguile away a fleeting moment or to smoke one of the aromatic, intoxicating cigars dispensed by the Secretary with ritualistic flourishes and cabalistic movements calculated to throw the visitor into a state of revealing fluency.

Let us take them in order, as Lewis Carroll put it, distinguishing those that have feathers and bite from those that have whiskers and scratch. F. S. Sinclair hove in one day trailing clouds of Arcadia, for with him was his wife, and they not long had been removed from the scene of the ceremony at Keene, N. H. Before marriage she was Phyllis Elizabeth Bullard. After a trip to Panama and Havana, they are to be at home at 144 Joralemon Street, Brooklyn, N. Y.

Next as we recall, came Frank Schreiner, of 1433 East 12th Street, Cleveland, Ohio, a veritable galloping Gazette, for in his travels for the Niles-Bement Company he encounters and collects data about many '26 men. In Pittsburgh he had discovered Ken Lord — discovered him, too, in an ecstatic mood and playing rapturously a "diversion on a penny-whistle" — practicing to join the pastoral concert of tripping flageolet players described in detail in this space last July. In Cleveland, Frank had seen Al French, now an aspiring employee of the French Oil Machinery Company of Findley, Ohio. He had news that Samuel Spiker likewise was in Findley, employed by the Spiker Underwear Company. (We suggest a business combine to Ralph Head with his custom-tailored shirts and Sam with his custom-tailored underwear — or is it? Ay, there's the rub.) Frank had also bumped into Harrison Browning, who works with the Mechanical Products Company in Cleveland. Both in New York and in Hartford he had encountered Jerry Doolittle in Greek restaurants. Greek chow-depots seem to have an affinity for Jerry. He is working for a Buick firm in New York and he drives a Chrysler.

Bean Lambert and George Faithful stuck their heads in the office some time ago. Bean is just back from Europe and expects henceforth to be located in New York. George is fast becoming a patent lawyer down there. Ted Mangelsdorf, whose marriage we were very happy to announce last month, likewise came in trailing clouds of Arcadia. He is now in charge of the Bayonne, N. J., Chemical Engineering Practice School. Congratulations are in order for the progress he is making.

Jiggs Rogers, erstwhile a Seattlite, this summer a globe trotter, was in to pay his respects. He has acquired a moustache which has most seductive curls on either side.

Guy Frisbee has packed up his kitchen utensils and galumphed out to Seattle, there to sell them between mountain climbs. He writes that he is not out there forever, which means that next June will find him back in Rochester. But more of that anon.

Lester Schoenfeld, cadet engineer at the Philadelphia Electric Company, has written: "In order to help you meet the tremendous responsibilities as general Poo-Bah, let me give you some dirt: Argo Landau, XV, is with the Monasot Chemical Company, making his million. — Bud Newman, VI-A, '25, is with the Electrical Specialties Company in Stamford, N. Y. — I am with the Philadelphia Electric Company as you see, just about finishing up their cadet engineering course."

Professor Locke sent in the following item: "Henry Shick left the Inspiration Mine in Arizona last spring to be with his father while the latter was in the United States. Now that his father has returned home, Shick has taken a job on the engineering staff of the Consolidated Copper Mines Company at Kimberly, Nev. He started as rock man and sampler, but was shortly promoted to the position of surveyor. He says that the town of Kimberly is a nice place, but in getting there he had to stay over the weekend in Ely, which surprised him as having many of the characteristics of the old-time boom towns of the West before the days of prohibition."

What Utopian place is this Ely? If Shick be right, and Shick should be right, we formally prophesy a repetition of the Rush of '49, but it won't be for gold this time.

Another one: on September 17 Eddy Talbot married Theodora Lucille Poole of Morrison, Ill. They are to live at 553 West Clark Street, Marseilles, Ill. Eddy is working there as a chemist for the Certain-teed Products Corporation.

Now if the audience will please stand, we will formally induct into office James Baker Bamford as the Secretary for Course IX. The Gensec has but one thing to say in commemoration of the event, and he will let Bobbie Burns say that for him: "A chiel's amang ye takin' notes and, faith he'll prent it!" — JAMES R. KILLIAN, JR., *General Secretary*, Room 3-205, M. I. T., Cambridge, Mass.

COURSE VII

If other Secretaries have as much difficulty in communicating with the course classmates as I, they would give up in disgust and despair. The reason for this attitude is because twenty-five per cent of the men cannot be reached at all, another twenty-five per cent are reached, because the mail is not returned, but they themselves will not reply. This leaves fifty per cent, of which I make up one-half the number, which has had something said about them in The Review since 1926. If, therefore, anyone can persuade George Cummings to drop me a line and tell something about himself, or can give me any information as to the whereabouts of Leonard Phelps, it would be greatly appreciated.

Mrs. Mary J. Mulliken informs us that she is living at 516-A Main Street, Kellogg,

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Idaho, where she is able to use a great deal of her Course VII training. It is a mining town in which lead is one of the chief ores mined and smeltered, the result being that lead, and to some extent arsenic, poisoning must be guarded against. It is where Industrial Hygiene has its practical application and allows her to appreciate that her training at the Institute was not in vain. Her husband, known to us all as Mully, a graduate of Course III, is surveying and prospecting for the mining company of the town. They are both enjoying life, but are always glad to receive news from their friends in the East. That is a gentle hint for some of their friends.

Indirectly I have been able to learn something about George Cummings. His employer was in Boston not long ago and informed several people who inquired for him as to his whereabouts. In this way two inquiries brought like stories from the original source which seemed, therefore, quite authentic. We were informed that George is still with the State Health Laboratories of Michigan, where he is much liked and is doing very efficient work. His glory does not stop here, for besides this he has become married, and according to the reports, very happily so. Possibly this explains his negligence in writing; it remains to be seen. — E. M. HOLMES, *Secretary*, 22 Bates Road, Watertown, Mass.

COURSE IX

Several weeks ago I received a sudden reminder that I had once been a member of Course IX. It came in the shape of a request from James Rhyne Killian that I undertake the duties of Secretary for that Course. So be it. I did and I am. From now on the interest in this particular bit of *The Review* will depend upon the garrulousness of my worthy colleagues in that Course. Fall to, gentlemen! Tell me true, just how many jobs you've had, and why; whom you married or why not; and last of all, where you are now.

My own gambolings since graduation have been, if possible, more hectic than they were while attending the Institute. There I was in two classes and four courses in a short four years. In the last year I have had three jobs, and am now in business as a jack rabbit contractor under my own name. A jack rabbit contractor is one who jumps about from one job to another, as though he had a tack in his internals. The first job after graduation was reporting for a newspaper, which was thoroughly enjoyable except for the long, long road which led so close by the poorhouse. The other two were with local contractors, proportionately less interesting and more lucrative. The above-mentioned business is but a fragile child, and will probably have croup during the coming winter. That completes the picture, I believe, except for the fact that I am unmarried, not having been as successful in getting wives as in getting jobs. Don't forget to send me your own little ditty. — JAMES BAKER BAMFORD, *Secretary*, 519 Walnut Street, Reading, Penna.

COURSE XIV

I am sorry to be so late in informing you of our activities, but I have been exceedingly busy, which prevented me from hunting you up, and most of you neglect to write in and say what you are doing. Thus I begin the season with a good, old-fashioned complaint.

Bill Erwin wrote to me a short while ago saying that although he is technically a member of the Class of '27, he wants to give his best regards to all of the men of '26 through this column inasmuch as they might not see his greetings in the Course XIV, '27 notes.

Stark Draper is back at Technology. Running true to form, he was awarded a fellowship in Automotive Engineering, which he accepted. He is now planning to take a degree in Aeronautical Engineering after obtaining his Master's Degree in Electrochemical Engineering. General Coleman, having obtained his Master's Degree, has been appointed instructor in the Department of Electrical Engineering, and, as I predicted earlier in the year, is preparing for the Doctorate.

Artie Dawes is touring the country for the shoe concern with which he has been connected since he left Technology. — Jewell is still in the teaching business. He retains his interest in football, and I have noticed that his school team, which he is coaching to some extent, is cleaning up. — I, too, became a Master of Science along with General Coleman in June. I am now teaching at the State A. and M. College in South Carolina, where we have a pretty good scientific school.

I hope my exhortation for news will produce results. Where are Ted Dowling, Bob Morrissey, Frank Romanoff, Towle, Milliliter Minsk, Bill Smith, and Pete Hulme? When you come home from that football game next Saturday write your Coursec that he may more creditably answer Jim Killian's cry for copy, and thus spread your fame to the remote corners of the earth. — MARRON W. FORT, *Secretary*, State A. and M. College, Orangeburg, S. C.

'27 Give three lusty chee-ahs and wave your handkerchiefs — bartender, order up another scuttle of suds for the gentlemen — sing hosanna, shout hallelujah! All this to proclaim the début of Messrs. Riley, Hegarty, Spitzli, and Houston before our note-reading public. Pay close attention as they reel off many words of pertinent and impertinent comment.

Says a card from Lee Miller, secretary for Courses I and XII: "I am to be married November 10 to Miss Mildred Gall, of Col. O. After that we will be permanently at home, I hope, in Syracuse, N. Y." The "Col." stands for Columbus, the "O.," no doubt, for Ohio. These abbreviations and the illegibility of the writing on the card give a very fair indication of the flustered state of Lee's mind. The editorial congratulations, rice, and old shoes to you, Lee.

With this we step aside. Gentlemen, applaud the approach of the acts for which you paid your money. [P. S. The Review Editors deleted about a yard of '27 Notes: my own and Course VII. We offer apologies!] — JOHN D. CRAWFORD, *General Secretary*, Room 3-205, M. I. T., Cambridge, Mass.

COURSE II

If I were the eminent Professor R. E. Rogers, I could probably expand the scant dribblings of news about Course II men into quite a readable article. But I am not a columnist, nor am I protected by a pseudo-anonymity as is J. D. C. Enough apology.

I have been informed by Tommy Knowles that Hal Hibbard has been transferred from Akron, Ohio, to Newark, N. J. Hal is evidently not in accord with Horace Greeley. The inimitable Knowles is also responsible for the following sporadic outburst: "I started my new job Monday. I am revising the design of dies for tubing (an extrusion process) of treads and repair stock for tire covers, interesting and varied, with quite a bit of responsibility, work to .001 of an inch, pray your results are O. K., a cut and try process, bury your mistakes, you know. Just finished a handball match with Mac that ended when we broke the ball. It would break when I had a chance to beat him. I had him 19 to 10." The Mac referred to is Gordon McNeil. Knowles and McNeil are still with the Goodyear Company as is also Hibbard.

Inskeep writes that he is an instructor in the engine laboratory, succeeding D. D. Jacobus, who has gone into steam table research under Dr. Keyes. Fritz Glantzberg continues to follow his flying career at Brooks Field, Texas, according to Inskeep. Fritz passed his twenty hour check in seventeen hours and forty minutes, while some of the other student pilots have yet to pass it after more than twenty hours of instruction. — It is in a very indirect way that I have learned that Bob Wallace is with the Stutz Motor Company somewhere outside of Chicago. This is very indefinite but mail would probably reach him in care of the Stutz Motor Company.

I hope some of you will get tired of reading about the same men issue after issue. Perhaps you will be stirred from your usual self-complacency into wrathful protest. We should all benefit by such a revolt. — DAVID R. KNOX, *Secretary*, 4506 Allendale Avenue, Detroit, Mich.

COURSE III

I've just come in to Lake City, Colo., for mail, and got a letter saying that Course Notes were due. I've been working with C. G. Drew [Chink Drew, '26?] on an old mine way up in the hills. My eyes have been trained to look upon anything under 2,000 feet high as flat, and we're six miles from the nearest neighbor. At present, winter drives Mr. Drew and myself to warmer climes.

Now, hear ye this from Ed Himrod at the Pecos Mines, Tererro, N. M.: "First of all, a combination of advice and events restrained me from going to South America, and I chased up a few companies in this country, finally landing with American Metals. Anyway I came out here and signed on as machine-man, and they put me to timbering. My first job was a string of drift sets through a stope, where they wanted to hold a roadway open. After the stope was filled, considerable difficulty was encountered in keeping the fill out of the drift, so they fired my partner and promoted me to stope-boss, a sort of under-shift boss. Each level is in charge of a stope-boss, his principal duties being to line out the holes for the machine-men, and so on, in fact, to direct the operation of all the stopes on the level, keep the chutes in repair and chase muck in general, hounding the machine-men to blast it, the muckers to put it in the chutes, the timberman to keep it going through the chutes, the motor crew to haul it, and the skiptender to

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hoist it. After that I don't care what becomes of it. All in all, a busy day's work. I climb enough ladders to reach the moon and walk about twelve miles every day. So far I haven't had any cave-ins, though I've been ordering some heavy shooting."

Hank Barlow was last heard from at Ruth, Nev. — Louis Arana is working on railroads in Peru, where his father is a senator. — This leaves only Bob Doten unaccounted for. [He is working for the City Service (Oil) Company at Quincy, Mass.]

If you find anything amiss, I'll explain that I'm writing on a very antique copy of *Snappy Stories*, in this town of 317 people, which once had nearly 10,000 within a ten-mile radius. There is a card game on, and since I began writing, the train crew has come in after putting the bi-weekly train (narrow gauge, forty-pound rail) to bed.

I am having all mail forwarded to me from my home address. — LEONARD RILEY, *Secretary*, 121 Whitney Avenue, New Haven, Conn.

COURSE IV

I have received so few letters from Course IV men, both Options 1 and 2, that I am forced to open this, my first greeting, with the following well-known quotation, "The statements contained herein, while not guaranteed, are based upon information which we believe to be correct." Come, you Option 1 men, let the boys know what you are doing. We are all interested, you know!

How are all the boys? All well and happy, thank you. Yes sir, and we are all going to Brother White's wedding next year, aren't we George? Don't get excited, fellows — George is now hooked, he says so himself, and he is to be married in a year. — As for Bill Duffy — well — the contracting game had Bill the first part of the summer, and now he is with the Massachusetts State Highway Commission as inspector, and so on. — Little George Papadopolus is happy with the American Bridge Company at Ambridge, Penna., and by the way, George, did you receive those structure problems I sent? — The Goodyear Tire and Rubber Company of Akron, Ohio, has furnished Henry Lyons a place to hang his hat. Henry is learning the tire industry and he likes it, too, he says.

Eddie Siegle is in Boston with Coolidge, Shepley, Bulfinch and Abbot. — Brucker is in Boston some place, I don't know where. — Saul Peraner is working with a reinforced concrete company somewhere in the City of Brotherly Love. — God only knows where those two twins, Rousseau and Bornbeau, are hiding. — Cahill, after helping to protect the Institute buildings from the over-ardent enthusiasm of the Sacco-Venzetti sympathizers, hired himself out to Mr. Burnham, an architect in Boston. — Our friend Patterson is tucked away in some corner of New York, and I would tell you where, if these notes could wait a week longer, because I am going to the Big City next Friday, and I hope to see him and celebrate over the week-end — never mind what for. I'll tell you in the next issue. — Johnnie Parker is working — yes, working — as an architect *for* and *at* Wellesley College!

As for your humble Secretary, he is numbered among those employed by the Metro-

politan District Water Supply Commission, in Boston, and any time you boys feel like spending two cents, drop him a line. — THOMAS E. HEGARTY, *Secretary*, 9 Mount Vernon Street, Somerville, Mass.

COURSE V

I am patiently waiting for the Alumni Office to send me a list of your addresses. Will you beat it and get them to me yourselves? There may spring up other advantages besides alumni contact with the Institute. One man may have something — material, information or ability — required by another for some process or project. Who, probably, would more willingly and gladly supply them than an old classmate. But such conditions cannot exist if we as a whole do not have an interchange of accurate addresses for correspondence.

It will be interesting to observe if we switch from our initial paths. From Course V, two went into the explosives industry, two into a mineral extraction firm, one into the leather business, one into a synthetic resin plant, and three into the instruction end of chemistry. Where the other three are I am not certain.

The magazine, *Chemical Warfare*, for August 15 to September 15, Volume 13, page 184, gives the names of those who received commissions as Reserve Officers in June. (I notice Woof-Woof's is there.) We are only a small part of '27, but let's make sure we occupy space in accordance with our value and utility. — EDWARD T. DUNN, *Secretary*, 205 East Stoughton, Champaign, Ill.

COURSE VI

Another month has gone by, but where are the piles of letters that I expected to find on my desk? But don't think that you fellows are hiding away from me, for I have the low-down on a lot of you already. For example, I called up Mr. Edison in New York the other day (on the company telephone, of course) and asked him if he had seen anything of any of you down there! He thought a minute, and remembered that he had given Harry Moser a job in his company, and then started to hang up on me. After I had assured him that I was not reversing the charges on the call, however, he became more talkative.

Of course a great deal of our conversation was purely personal and wouldn't interest you at all, but he admitted that he was rather worried about Tweeddale. It seems that Elwood is working in the D. C. Test Department, all of which is very well, but the poor fellow is homesick. Now in the case of Bill Corey, the city has affected him just the opposite. Bill used to be very quiet, but the bright lights and all of that have gotten under his skin I guess. Yes, Bill is in the New York Edison, too.

But all joking aside, fellows, I called up Bill Sullivan the other day at the Institute. Bill is an assistant in the Dynamo Lab, and I thought that if I called Professor Tucker's office, or some other office there, I could get him on the phone. I happened to call about noon and tried one office after another, and couldn't get an answer. Then the Institute operator got tired of ringing all of the professors' offices and asked me whom I wished to speak to. And after all my trouble I found that Bill had an office and a phone all his

own. I wouldn't be surprised if he had a nice-looking stenographer and is keeping it from me.

But fate has been unkind. The Gold Dust Twins, Massa and Moccia, are separated. Moccia is with Stone and Webster Company here in Boston, while Frank is enjoying the fruits of his well-earned fellowship. He is working up a thesis on a trick motor that the General Electric Company has furnished him. Ike Swope is also at the Institute working for a Master's degree.

Toby DeNapoli, I hear, has joined Andy Anderson with the Munroe Calculating Machine Company in Orange, N. J. The old thesis partners, no doubt, already have plans made which will revolutionize the business. Dick Spry is with the Westinghouse Company in Pittsburgh; Phoebe Felch is with the American Tel. and Tel. Co. in New York; and Pete Peterson is with Jackson and Moreland in Boston. That is about all I can say for them until they drop me a line. That also applies to Sisk, Kingsley, and Charlie Frank, who are with the General Electric Company in Schenectady. Bennie Margolin is here in Boston overcoming sales resistance for Frigidaire electric refrigerators.

I have graduated from the distribution department of the Malden Electric Company to the engineering department where some very interesting work is now being carried on in connection with tying in Salem, Malden, Revere, and a few others with the Boston Edison system.

I lack further inspiration due to the fact that at this writing none of you have as yet received the first issue of The Review, but I hope that for the next issue you will help me out with a generous amount of correspondence. — CHARLES A. BARTLETT, *Secretary*, 27 Ifley Road, Boston 30, Mass.

COURSE X

Waiting for first-hand information has not proved much, for only one letter has come from a member of this Course. That came from Phil Darling, who is working with the American Smelting and Refining Company in Chihuahua, Mexico. To quote, "Quite a jolt after coming directly from Senior Week." Phil can congratulate himself that there was no time for an anticlimax.

Thorne and Andrews dropped into the Practice School Clubhouse in Buffalo one week-end while I was there. From them I gleaned more information than I had secured before. They are both working for the Eastman Kodak Company in Rochester and how well, for they rolled up to the house in a shiny new Ford. They told me that Don Calderwood was in Rochester, too. How Don divides his time between sleep at the Y. M. C. A., work at the Rochester Gas and Electric, and the third portion was a mystery to them.

Ralph Johnson went back to Hawaii which, from his letters about the summer vacation, must have proved exciting, what with trying to keep up to Jim Lyles, who was with him. He is now working on a sugar plantation making tests on equipment so that he is as busy as a one-armed paper-hanger.

Both Ferguson and Fisher have started in the oil game — Fergie with the Standard Oil Company of New Jersey and Bud with the Standard Oil Company of Louisiana. I am to

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suppose that with a few months of experience they are about to start an oil company of their own. If they accept this suggestion, gas will become as cheap as alcohol [or alcohol as cheap as gas! — J. D. C.]

The rest of the information is pretty much rumor. Kaplan and Fletcher are with the Cities Service Company and Kaplan, as far as I know, is the first of the Course to take on married responsibilities. — Perry found a chance for a long boat ride, and went to Chile for the Guggenheim Company. He found a long wait, I expect over three years. — Bill Richards is working for the Studebaker Company in South Bend, Ind. On the way out he took a side trip to Edgewood Arsenal to renew his interest in the place and, incidentally, in a friend. — Buckley, I understand, is in Akron with the Goodyear Tire and Rubber Company.

At the last we have a group who decided to work without wages. Norm Hurd and Ervin Huebener are enjoying the cold weather in Bangor while running their Practice School tests, as Art Connell, John Collins, Pub Whittier, and I make the most of living in Winchester, not far from our old haunts. Our one ambition is to keep our topless and bottomless Ford running until the Practice School is over. — DONALD H. SPITZLI, Secretary, 7 Central Street, Winchester, Mass.

COURSE XIV

The first call to arms resulted in a mere thirty-five per cent of the Course's roster answering the request for news. That is hardly complimentary to the '27 electrochemists when one remembers that there are only nine in the Course. So right now we'll start what will probably be a lifelong plea: "F'evens sake, send some news."

Bill Erwin was the first to write, his letter bearing the postmark of that little hamlet on the Atlantic — Winthrop, Mass.: "Now that I have the favorite corn cob fuming in the most atrocious fashion, enveloping me in a blue fog of good old nicotine," writes Bill, "I'll answer your call for news. The outstanding activity of the past summer was taking and passing 6.03. Then a thesis on Contact Potential which is now keeping me up nights in the process of writing. I shall soon be located with the Oxford Paper Company at Rumford, Maine, as assistant efficiency engineer. You will probably hear from Charlie Dinan [you sure took things for granted, Bill], but in case you don't you will be glad to know that he, too, is finishing his thesis." By now we hope that both Bill and Charlie have finished their theses and have received their degrees.

Mankowich was the second to respond, and writes from Waterbury, Conn.: "I am working here with the Chromium Corporation of America, a subsidiary of General Motors, as an electrochemical engineer. The work is a continuation of what we used to do in the electrochem lab, and thus far I've been working on resistivities of plating solutions, throwing power of the solutions, using the apparatus once mentioned by Professor Thompson, and relation between s.g. of chromium plating solutions and concentration of chromic acid, over a wide range of temperatures. At present I am working on the effect of additions of trivalent chromium salts to the

patented solutions used by the company, finding their effect on efficiency and throwing power. So I am very well pleased with my position. I have heard from none of the fellows and don't know what any of them are doing."

The third and last to write was Lyman Johnson. "You're the first of the gang I've heard from since June," writes Lyman. "I spent a pleasant summer and had an excellent vacation and a great time. [We can guess that a good deal of your time was spent in a certain place with a certain party, Lyman, and don't forget we look to you as Bill Erwin's only competitor for the Course XIV Cup.] John Swift and I are back at school, about to start work for a Master's degree. Things are much the same at the Institute, except for the lack of familiar faces and the erection of two new buildings."

That completes the definite information I have been able to accumulate, but by conjecture and previous plans, I believe Staebner is with the Bell Telephone Research Laboratory in New York, and Maguire is with Exide Battery Company, although I do not know where he is stationed. I am working with the Leeds and Northrup Company in Philadelphia, taking a training course, and am enjoying the work very much. That leaves Marsh as the only one unaccounted for. I guess we had better post a reward for information leading to the whereabouts of our wandering boy. At any rate, let's hope we hear from him before the next issue of The Review.

Once again, don't forget the slogan, "Send some news." — NATHAN COHN, Secretary, 44 East Tulpehocken Street, Germantown, Penna.

COURSE XV

I certainly called down the blessings of Heaven on our good friend John when I found out that he had written up my section of the class notes for the November issue. It would have looked pretty black for me if he hadn't stepped into the breach with an explanation on my behalf and a few bits of good news on behalf of the Course XV men. Thanks for the alibis, John.

This month does not offer much more than last, but between trying to be a business man and scraping off the liberal coating of paint that I accumulate each day at the Murphy Varnish Company I've managed to locate a few bits of news and gossip. I haven't heard from any of the fellows, but I still live in hope, and when Johnnie gets out his list of addresses I'll do a little inquiring on my own hook. Perhaps Ned Anderson will send me whatever little scraps of news drift into Professor Schell's office.

Dice Coburn is located with the Wisconsin Steel Company in South Chicago and is living at the Y. M. C. A. there. Perhaps we'll hear from him soon as to how the world goes 'round out there. — As for little old "Rubber Stamp" Field, I saw Johnnie when I was up at the Institute in September, and he was still looking around for a job to suit his temperament. I hope some good concern finds a "crying need" for his abilities and I'm anxious to know what he finally decided to do with his oratorical powers.

Ken Hemenway, as you may or may not know, was married last Junior Prom Week

and has acquired a home of his own and a Buick Roadster. Pretty fast work, old man. He has decided to follow his Dad's footsteps in the legal profession, and is studying at Harvard Law School this year while helping himself out in a financial way by searching deeds and titles, and so on. — Bob Hancock, Ex-'27, has discontinued his studies at the Institute and is now acting as efficiency expert at his Dad's factory in Charlotte, Mich. — I haven't heard from Glenn Jackson, but I know that he spent the summer at Fort Worth, Texas. He expected to get his pilot's license, and whether he'll go into aviation for a while or follow up his training in Chemical Engineering, I can't say.

I expect to get in touch with Jimmy Lyles, as he's quiet near at hand, but I haven't got around to it yet. I hear that George Leness, '26, is down with Jim at Harris, Forbes and Company now. ("It's always fair weather, when good fellows get together.")

Frank Mesker expects to become a very much married man this Christmas, when he will wed Miss Pauline Carl of Brookline. The engagement was announced in September. I had all sorts of misgivings when I read of the St. Louis tornado, as I happen to know that Frank lives right in the destroyed area. Later rumors, however, are quite reassuring and report slight damages to the Mesker homestead. I'm hoping for an official report from Frank on weather conditions, past, present and future.

I bumped into George Munroe in Boston Common a couple of months ago, so I know he's located there somewhere. (I don't mean in the Common.) As to his exact whereabouts, however, I'm rather in a fog, as I didn't get an opportunity to speak to him. — Heinie James is back at the Institute finishing up a few courses. Dick Innerasky is also busy with another thesis. Here's best of luck to you, Dick!

The American Tar Products Company has grabbed off quite a few of the master minds of Course XV. While we heard that Ray Hibbert and Hal Reed had cast their lot in that direction, I recently discovered that Warren Smith has joined the "Tar Babies." He and Ray are in the Chicago plant. By the way, Ray and I have both been winking slyly and chuckling at the latest exchange of wisecracks between *The Tech* and *VooDoo*. This occurred when the paper reviewed the October issue of *Phosphorous* in a rather irreverent manner and precipitated a retaliatory review of *The Tech* by *VooDoo*. Long live publication squabbles!

Walker food must be improving. At any rate, Ezra Stevens still clings to the Walker diet. He's working for the Raytheon Company (so I hear), manufacturing rectifier tubes for radios. He is understudy to the sales manager.

As for yours truly, I'm busy learning the varnish business and spending a week or so in the various departments of the Murphy plant. I expect to go into the lacquer lab for a while after I finish my training course. Nevertheless, I'm quite enjoying the work and I get my lunch gratis, which suits Scotty to a "T."

Here's hoping I'll hear from a few Course XV men before next issue. C'mon, take a few minutes and drop me a line. — GEORGE C. HOUSTON, Secretary, 612 Prospect Street, Maplewood, N. J.

News from the Alumni Clubs

Technology Club of Lower Canada

THE Institute Alumni in and around Montreal met at a dinner in the Queen's Hotel on Wednesday, October 19, to meet and welcome Mr. Denison, Secretary of the Alumni Association, who spent several days in the city. The prime object of his visit to Montreal was to assist and stimulate efforts which are being made by local Alumni to revivify the dormant Technology Club of Lower Canada. A step was made toward reorganization by the election of Frank E. Came, '81, as President, and Joseph H. Townsend, '24, as Secretary. Mr. Denison favored us with an address on Institute progress, and his anecdotes of student life of the last few years carried all present back to their undergraduate days. The address was accompanied by some interesting films on the Technology Reunion and the cooperative courses.

During his stay Mr. Denison addressed the students of the Montreal Technical School on the scope and advantages of a technical education. — JOSEPH H. TOWNSEND, '24, *Secretary*, 337 Maplewood Avenue, Montreal, P. Q., Canada.

The Technology Club of Cincinnati

The weekly luncheons held every Tuesday in the Hotel Havlin dining room are seeing more members of the Cincinnati Club present as fall comes upon us. The architects, both in numbers and in frequency of attendance, easily rank first in making the luncheons a success. Here you are certain to find some of these IV men: C. F. Cellarius, '16; F. W. Garber, '03; E. H. Kruckemeyer, '11; C. R. Strong, '11; R. H. Tietig, '98; and C. B. Woodward, '03. As all of them are now taking a prominent part in designing our local public buildings we readily speak of them as "gracing the board." The contractors and material salesmen could not overlook such opportunities and some of these are always on hand: F. G. Baldwin, '06; C. T. Kennedy, '14; H. D. Loring, '07; F. W. Morrill, '07; J. S. Raffety, '22; to say nothing of the Secretary himself, W. V. Schmiedeke, '12.

The Club's scholarship fund is kept well in hand by Stuart Miller, '07, who has again arranged to help defray the expenses of a man at Technology this year. The report on our candidate of last year was very satisfactory. It is gratifying to note that there is a decided increase in the number of men attending the Institute from this district.

The Cincinnati Club is quite elated too because the city's new library commission has chosen the head of the architectural department of Technology to take charge of the planning of the new \$2,500,000 building.

May witnessed the last evening meeting of the Club when a dinner was held at the Hotel Gibson in honor of our old Dean Burton, here in behalf of the dormitories. Although it was an evening in Cincinnati's annual premier musical event, the May Festival, nevertheless twenty-five men were present to greet our

old friend, to hear his interesting comparison of Technology affairs as they are and as they were.

Conditions were not favorable to a summer outing this year, but more activity is looked for in the Club's winter program. — W. V. SCHMIEDEKE, '12, *Secretary*, Penker Construction Company, 123 Valencia Street, Cincinnati, Ohio.

Technology Club of Chicago

It is a little early for definite announcement of the social program for the winter as these notes go to press about the last of October. The intention of the Club is to keep every member individually informed but, in a city the size of Chicago, address changes are so frequent that this task is of more than usual difficulty. However, if any reader does not receive notices he should communicate with the Secretary, whose address is given below.

Each Tuesday at 12.30 P.M., the Club has a luncheon at the Electric Club at 30 North Dearborn Street. Even if you cannot come regularly, drop in occasionally. You will find a congenial gathering, no speeches to bore you, and service that equals any in Chicago. You need spend no more time than you wish as the gathering is quite informal.

In the next issue of the telephone directory, the Club will be listed under the caption of Technology Club so that you may readily find it if you forget the address. Your officers are endeavoring to make the Club a real help to you and the degree of your interest measures their success. So let us all get aboard for the busiest and best year to date. — J. F. DUFFY, '11, *Secretary*, 19 South LaSalle Street, Chicago, Ill.

Technology Club of Philadelphia

On Tuesday, October 18, we held our first dinner meeting of the season. Our food, drink, music, and entertainment were Italian, so we can jointly call it "Italian Night." Another distinctive feature of the affair was the fact that it was a one man show, for our genial President, Dud Bell, '17, not only arranged the dinner but also provided all the entertainment. Dud is a prestidigitator of no mean parts and put on an act that had us guessing all the time. Eventually, however, our entertainer ran out of tricks and we ran out of "vino," so we all left for home to the tune of the Stein Song.

Anderson, '06, missed the above-mentioned party — his first absence in ten years. He reported to the Secretary that he was out of town, figuring. We always have had a hunch that Anderson was good at chasing figures.

Captain George C. Westervael, '08, who was in the same course with Anderson, shows his versatility by retiring from the Navy after thirty years' service, the last few years of which he was manager of the Naval Aircraft Factory at Philadelphia. He is now taking a "flyer" on Broadway, supervising

the production of his new play in New York.

H. W. Hill, '20, was also absent from our "Italian Night" dinner, as he was touring the White Mountains with his bride on the second half of their honeymoon. The first half was in July, when they toured Montreal. What a change three or four months of married life makes in a man! — A. H. KINGHORN, JR., '20, *Secretary*, 2 Colfax Road, Upper Darby, Pennsylvania.

Washington Society of the M. I. T.

The October speaker luncheon was held on the twenty-first at the University Club with an attendance of twenty-five. Mr. W. Partridge, Bureau of Yards and Docks, Navy Department, addressed us on the subject of "Scale Models and Their Range of Usefulness." He showed a scale model of the Potomac Valley extending from Washington to above the site of the proposed water power dam. — A. E. HANSON, '14, *Secretary*, Government Printing Office, Washington, D. C.

Southwestern Association of M. I. T.

The Southwestern Association of M. I. T. opened the season with a luncheon on Wednesday, October 5, at the University Club, which was attended by eleven Alumni. Those present included Herman C. Henrici, '06; A. T. Cushing, '11; E. M. Price, '08; J. C. Irwin, Jr., '18; G. W. Hall, Jr., '23; J. J. Falkenberg, '19; C. E. Brown, '20; C. S. Timanus, '18; William L. McPherrin, '14; R. J. Scholtz, '22; and the writer.

After lunch Henrici announced that it was time to hold an election of officers, since he had served for nearly a year, and also since he had recently been elected President of the City Club, which latter would make heavy demands on his time. Accordingly, nominations were made and an election held by a system suggested by Henrici, which worked very well. The following were elected for the coming season: President, G. W. Hall, Jr., '23; Vice-President, C. E. Brown, '20, and Secretary-Treasurer, B. W. Crenshaw, '23. By way of finishing off his service to our Club, Henrici volunteered to let us have his home again at any time for another party, such as we had last June when forty-four people were present, including former students and their families.

After the election of officers, Irwin, who is with the Kansas City Ice and Cold Storage Company, gave us a short talk on the cold storage industry. It has been our practice recently, to have one man give after luncheon a short talk on the business in which he is engaged. This has proved very interesting, often bringing out a discussion of the technical or commercial angles of the industry. We owe our thanks to Irwin for the talk which he gave us on this occasion. — ELTWEED POMEROY, '23, *Secretary*, Henrici Lowry Engineering Co., 402 Security Building, Kansas City, Mo.

Technology Club of Kentucky

On a beautiful Saturday afternoon in June, to be explicit the fourth of the month, the Technology Club of Kentucky held its annual outing at the Louisville Country Club. It was the sort of day which entices you until finally you leave your desk with work piled high and play hookey to the golf course, the tennis court, or what will you? So the Technology men of Louisville responded to the seductions of this June day; they came in droves, three of them — James P. Barnes, '05; Curtis C. Webb, '10; and Ye Scribe. Forty-five holes were played that afternoon. Lest there be any suggestion that Ye Scribe should place his application for membership in the Ananias Club, he hastens to add that after nine holes, C. C. Webb was so distressed by the remarkable game of Ye Scribe that he left to arrange dinner at the Country Club while the other two played out the eighteen holes, thus bringing the total to forty-five. The scores? Those of the representatives of 1905 and 1910 were not at all bad, in fact right good. Ye Scribe's score? His has long since passed into the limbo of oblivion.

The dinner arranged by our then Vice-President, C. C. Webb, was excellent, and was attended by several other Technology men who, stronger-willed than the three aforementioned golfers, had resisted the wiles of the June day and remained in their offices. They are indeed earnest engineers! A goodly portion of those at the dinner had the forethought to bring their ladies, whereby we all of us profited. Our able President, Frank D. Rash, '01, presided most efficiently at the dinner and at the business meeting held at the table during the dessert. He appointed a nominating committee which immediately, without visible consultation, brought in a report and railroaded through the following as officers for the present year, 1927-28: President, Curtis C. Webb, '10; Vice-President, E. R. Cowen, '07; Secretary, D. C. Jackson, Jr., '21.

During the dinner the various men were called upon to describe some of the most recent doings of the concern with which they were connected. This was extremely interesting and is recommended most heartily by Ye Scribe to the officers of other alumni clubs. Present at the dinner were the following: Mr. and Mrs. Louis S. Streng, '98; Mr. and Mrs. Frank D. Rash, '01; Mr. and Mrs. James P. Barnes, '05; Mr. and Mrs. E. R. Cowen, '07; Mr. and Mrs. Curtis C. Webb, '10; Charles E. Breitbeil, '22; C. P. Worthington, '25; D. C. Jackson, Jr., '21. — DUGALD C. JACKSON, Jr., '21, *Secretary*, Speed Scientific School, University of Louisville, Louisville, Ky.

Technology Club of New York

The 1927-28 season of the Technology Club of New York was inaugurated during the summer months with the annual election of officers to serve for the coming year, as follows: President, Thomas C. Desmond, '09; Vice-Presidents, James P. Munroe, '82, T. Coleman du Pont, '84, F. C. Lufkin, '85, and Charles Hayden, '93; Treasurer, R. B. Haines, '13; Secretary, Duncan R. Linsley, '22; Governors to serve until 1930, Robert J. Marlow, '17, Oscar de L. Mayer, '19, James A. Burbank, '16; Governor to serve until 1928

(to fill existing vacancy), Frank W. Preston, '25. Shortly after the election, Tom Desmond, who was reelected to serve for a second consecutive term as President, left for a trip of several months through various countries in Europe and is expected back around November 1.

W. D. B. Motter, '05, Chairman of the Regional Scholarship Committee for the Metropolitan District of New York and a Governor of the Club, announced a short time ago the award of a freshman scholarship to the Institute. The final decision was reached only after great difficulty, as three or four candidates for the scholarship were equally well qualified and worthy of such an honor. Mr. Motter announced that an effort would be made to raise additional funds privately among some of the Technology Alumni in New York who are interested in this phase of Institute activity as an aid towards two other scholarships. Mr. Motter has devoted considerable time to his duties as chairman of the committee and is to be congratulated on his work.

Alexander Rice McKim, '86, one of the founders of the Club and prominent in its early history, has gone to Germany for an indefinite stay to renew associations made on the Continent while he was studying abroad after his graduation from the Institute. The Club has been the headquarters for many Institute men to and from European trips and we have had the pleasure of numerous visits.

Oscar de L. Mayer, '19, sailed for an extended stay abroad accompanied by Mrs. Mayer and has been over most of the summer. — Lester D. Gardner, '98, Editor of *Aviation*, has also been abroad with Mrs. Gardner and there is great speculation as to whether or not Lester will break his record of last year when he traveled over 21,000 miles in the air on his European jaunt. — Charles Howard, '06, has returned to Germany as representative for P. W. Chapman and Company, who have been negotiating several large loans. — Francis Bennett, who was a guest at the Club, sailed a short time ago for the Argentine to resume mining activities in that country. — Recent visitors at the Club have been Ike Litchfield, '85, and former Dean Burton from Boston, and Walter Davis, '10, from Los Angeles. — DUNCAN R. LINSLEY, '22, *Secretary*, 56 William Street, New York, N. Y.

Technology Club of Hartford

The annual outing of the Hartford Technology Club was held jointly with the New Haven County Technology Club at Boxwood Manor, Old Lyme, Conn., on June 27. The first event of the day was a baseball game between the two clubs for the second cup donated by the Hartford Club. The Hartford team won, giving it two games to New Haven's none.

In the second golf match for the second cup donated by the New Haven Club, the New Haven players won, making the standing: New Haven 2; Hartford 0. The fourth tennis match was played in the afternoon. New Haven won, and the standing of the clubs is two wins each.

Dr. Samuel W. Stratton, President of the Massachusetts Institute of Technology, was guest of honor. Other guests were Professor Samuel C. Prescott, '94, President of the

Alumni Association, and Orville B. Denison, '11, Secretary-Treasurer of the Alumni Association. E. C. Alden, '95, President of the Hartford Club was toastmaster.

We held our first luncheon of the season Friday, October 21. About thirty attended. Our guest was Hiram P. Maxim, '86, who showed the moving pictures he took of our joint outing with the New Haven County Club at Old Lyme. The pictures included the baseball game and the golf and tennis matches and were exceptionally good. They brought forth many a laugh. To see ourselves as others see us was a surprise to some if not to all. — G. W. BAKER, '92, *Secretary*, Box 983, Hartford, Conn.

Worcester County Alumni Association

George D. Manter, '31, of Clinton has been the recipient of the scholarship of the Worcester County Alumni Association of Technology. He was graduated from the Clinton High School in the Class of 1926. This scholarship is awarded annually by the Association to the applicant showing the highest scholarship and records in entrance examinations. The committee on scholarships is Herbert W. Estabrook, '97, Chairman, Albert S. Heywood, '92, and F. Harold Daniels, '11. They, and the officers of this association, will be glad to hear from any resident of Worcester County who would be desirous of competing for this scholarship.

The association was founded in 1907 for the purpose of bringing the graduates and former students into closer touch with each other. It admirably served its purpose and with its increased membership the last few years there has been much agitation to establish a fund for an annual scholarship. During the presidency of Mr. Estabrook this fund was started, and an award was made for the first time this year. The present officers of the association are Ernest P. Whitehead, Jr., '20, President, A. B. Sherman, '06, Vice-President, and Fred N. Dillon, Jr., '22, Secretary-Treasurer. — FRED N. DILLON, JR., '22, *Secretary*, State Mutual Building, Worcester, Mass.

New Haven County Technology Club

The annual meeting of the New Haven County Technology Club was held Saturday evening, October 15, at Fitzsimmons Restaurant, New Haven. After dinner the new officers were installed and plans for the coming year were discussed. The evening closed with a bowling tournament. The officers for the coming year are: President, James R. Putnam, '01; Vice-President, G. Vincent Maconi, '15; Secretary, Professor Hudson B. Hastings, '07; Treasurer, Sydney W. Gould, '21; Member of the Governing Board, Herbert R. Polleys, '18. The following Club members were present: Stuart M. Boyd, '18; Arthur H. Clark, '13; Dorothy B. Conway, '25; Charles J. Farist, '19; Hudson B. Hastings, '07; Charles C. Jones, '12; Gerald M. Keith, '12; Philip G. Laurson, '10; G. Vincent Maconi, '15; Harold G. Manning, '12; Roy L. Parsell, '14; Herbert R. Polleys, '18; Albert S. Rairden, '22; Richard H. Rich, '95; Seaphes D. Shinkle, '13; Marshall S. Wellington, '18; and William H. Whitcomb, '03. — GERALD M. KEITH, '12, *Secretary*, 186 Saint Ronan Street, New Haven, Conn.

Books

A review of recent volumes of interest to Technology men

Porter and Walker

AN AMERICAN SOLDIER AND DIPLOMAT: HORACE PORTER, by Elsie Porter Mende in collaboration with Professor Henry G. Pearson. \$5.00. xxii + 390 pages. New York: F. A. Stokes Company.

THIS interesting biography of a genuinely "one-hundred-per-cent American" is sadly but refreshingly out of style. To be in the current literary swim, the striking events of Horace Porter's career should have been viewed through the kaleidoscopic medium of a highly imaginative author not scrupulous as to sources. That fertile variety of writer, according to the present fashion in alleged biography, gives us, not facts, but certain imagined subjective reactions to arbitrarily selected and highly problematical happenings. Through this "fictional" method, the subject of this new kind of biography finds himself in the parlous case of the old woman who fell asleep on her way to market and whose petticoats (this was in an earlier age) were "cut round about." As will be remembered, her little dog barked at her and she exclaimed, as would the subjects of modern biography were they here to protest, "Law sakes a mercy, I *knows* it isn't I!"

Fortunately, General Porter's daughter, skillfully guided, it is evident, by the practised hand of Professor Pearson, has chosen to write a book of genuine biography and has been scrupulous to present a portrait of her distinguished father that shows, not only the rare charm, but also the exceptional character of a man eminent as a soldier, as a diplomat, as a social leader in the proper meaning of that term, and as a citizen jealous of the fame of a country to which he was singularly devoted and in the upbuilding of which he so conspicuously helped.

Born in Huntingdon, Pennsylvania, in 1837, and graduated from West Point in 1860, Horace Porter had that youthful experience as an officer in the Civil War which did so much to develop initiative and to mould character. It created out of the men born in the second quarter of the Nineteenth Century a generation exceptional in vigor, courage and sound judgment. From their efforts resulted the extraordinary growth in industry, in transportation and in business organization which signalized the period between 1876 and 1900.

The outstanding events of Horace Porter's remarkably full and superlatively useful life were his Civil War experience, made particularly notable by his close relations with Grant; his illuminating association with the Pullman Company which brought him into contact with many leading men both in America and abroad; his connection with other new undertakings, all of them giving him a rare training in administration; and his notable career as the first American Ambassador to France.

Returning from abroad in 1905, General Porter, until

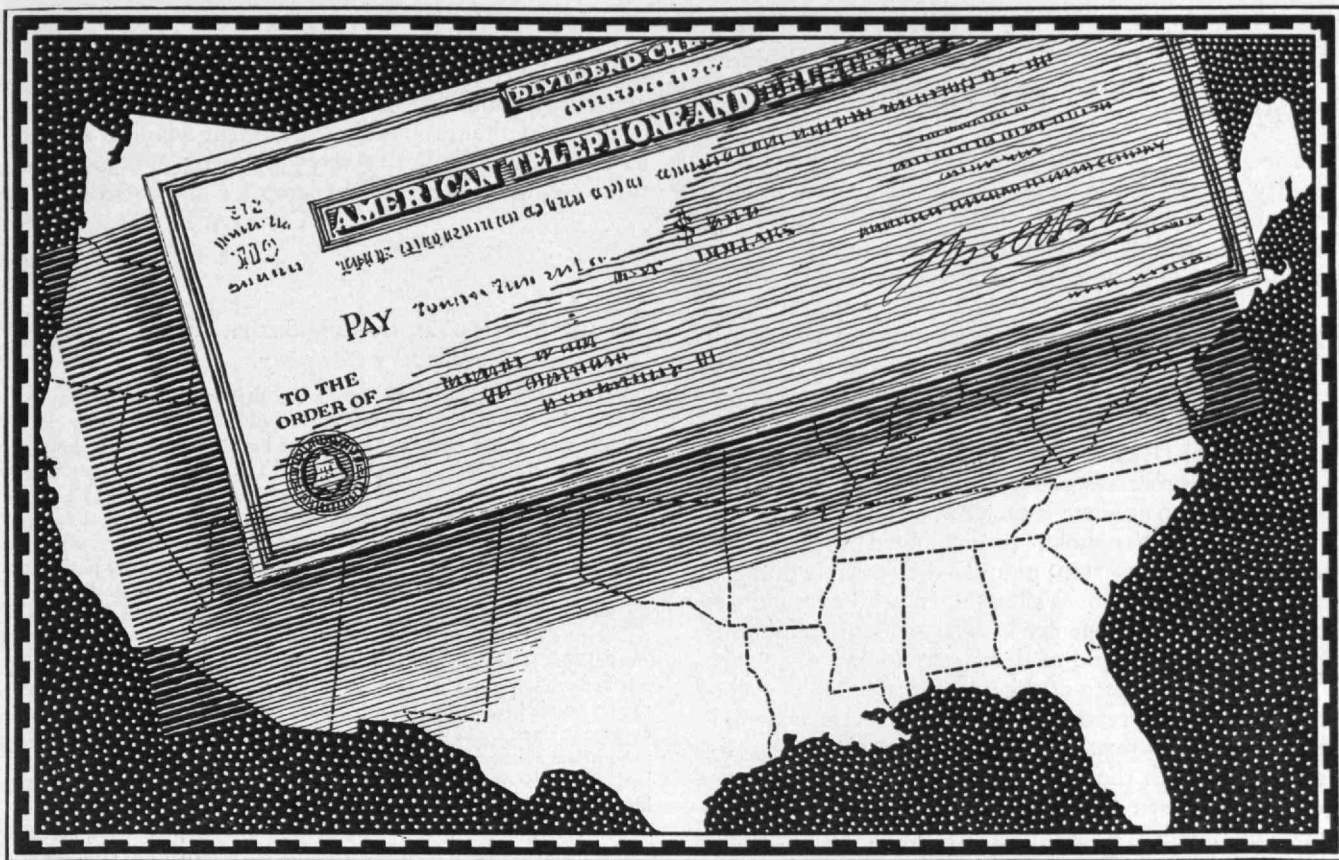
his death in 1921, was a recognized leader not only in New York City but in the nation as a whole. As President General of the Sons of the American Revolution, as President of the Union League Club of New York, as President of the Navy League and of many other important organizations, he left a marked and fortunate impress upon his generation.

General Porter's career is of particular interest to Technology men because of its rather remarkable parallelism with that of President Walker. Both, as young men, were conspicuous in the Civil War and each was the personal aide of a famous leader, Walker having been attached to the staff of Hancock, and Porter to that of Grant. Both men went subsequently into Federal office, Walker almost immediately as head of the Census of 1870, and Porter, much later, as Ambassador to France. The closest resemblance, however, was through their notable devotion to civic affairs and their skill in guiding public opinion into better and broader channels of activity. At the height of their careers, Walker in Boston and Porter in New York were the men to whom the community instinctively turned when some important matter of reform, of better administration, or of education in the wider meaning of the term, needed to be carried through. Both were in too great demand, for their own physical good, as chairmen or orators on important public occasions, as speakers upon a wide range of civic, social and political topics, and as hosts worthy of great municipalities when Boston or New York were called upon to receive distinguished foreigners. Unhappily, Walker's career was cut short many years earlier than Porter's.

One of the most picturesque episodes in Ambassador Porter's life in Paris was his locating, in the face of great difficulties, the burial place of John Paul Jones, and his bringing of the body to its present resting-place under the chapel of the United States Naval Academy.

Almost every day of General Porter's life, from 1860 to his death more than sixty years later, was crowded with stirring and significant events. Few better remedies for that pessimism so prevalent among Americans regarding America could be prescribed than a reading of this wholesome life of a great civic leader who, believing in his country, was yet not blind to her faults and who regarded it as his duty, along with that of every other man of character and of education, to do all in his power to remedy those shortcomings. His daughter has rendered a real service in undertaking what must have been a difficult task, and she has shown excellent judgment in securing the assistance of Professor Pearson, whose earlier books of biography had proved him to be peculiarly successful in what, if pursued conscientiously and with balance, is one of the most difficult, as it is one of the most useful, of the literary arts.

JAMES P. MUNROE, '82



How many are 421,000 stockholders?

*An Advertisement of the
American Telephone and Telegraph Company*

ON OCTOBER 15th, American Telephone and Telegraph Company checks representing the 152d dividend were mailed to its 421,000 stockholders. That is the largest number of stockholders of any company in the world.

The American Telephone and Telegraph Company is owned by a great investment democracy.

Its dividend checks are cashed at banks in every state in the Union, by people representing all trades, stations and professions.



No institution is more nationally or publicly owned than the American Telephone and Telegraph Company, which in turn owns more than 91% of the common stock of the operating companies of the Bell national System. The average holding is 26 shares, and no one person owns as much as 1% of the total stock.

The Bell System was developed in the interest of telephone users and is owned by the public that it serves.

The Beaux Art System

A STUDY OF ARCHITECTURAL DESIGN, by John F. Harbeson. \$7.50. xii + 308 pages. New York: *Pencil Points Press Inc.*

The sapience of the architectural professor is a commodity which, in the daily ministration, must be kept in a merciful suspense, permitting just a sprinkle here and there, as the need arises, on the tender student intelligence. This desultory and immediate imparting has, of course, its value beyond words, but the larger relevances frequently escape the young idea which only dimly catches suggestion of organic method. It is to this disability Mr. John F. Harbeson has, in most engaging fashion, particularly addressed himself in his "Study of Architectural Design," a volume in which the author's professional processes are set forth with great clarity and detail. The student is met as he stands blinking at the uttermost threshold, is conducted with patient enthusiasm step by step, permitted delectable glimpses of the giants as he moves along, until, with ever increasing endowment, he emerges into a confident community with the opulent world of Beaux Arts.

Worthy frontispiece of the volume, symbol as well of the high estate of rendering in the Beaux Art system, is the beautiful *tempora* of Jacques Carlu. Copiously distributed through the text and in close support of it are admirably chosen types of the brilliant draftsmanship which distinguishes the French tradition, notable drawings carrying the convincing names of Despradelle, Roger Expert, D'Esprouy, Cledanne, Haffner, Cret, Ellington, of the author himself, and, in so strange a gallery, the romantic Klaunder. One is thrilled by the pictorial brilliance of the book.

With such meticulousness does Mr. Harbeson set forth his process of study both of design and rendering that a certain unreality of emphasis, which would not be apparent in the elbow to elbow contact with the student, is occasionally imparted to purely personal theories. This is an evil of print, however, and does not inhere in the spirit of the text, which is a thoroughly modest, if confident and authoritative interpretation of the genius of the French system. Adequate flexibility there is in the process, however, for the exercise of the student's individuality, but he is not encouraged to independent flight until he has found his wings.

An interesting foreword by the late Lloyd Warren introduces the subject of the "Analytique." The pupil is taught to address this order problem with a measure of detail which reaches eight chapters — the *esquisse*, the preparation for first criticism, the study of the problem, the use of documents, the composing of the sheet, the passing to ink, and a double chapter on rendering. Successively are taken up, with corresponding logic of arrangement, the Archaeology Project, and the Class A Problem, the very stimulating chapters of this last treating of the "Ancien," the Study of the Plan Project, the "Unsymmetrical Plan," "The Ground Plan," Mosaic in Actual Buildings, the Class A Decoration Problem, Drawing the Class A Problem, and Competition. Follow a group of chapters on the Sketch and Sketch Plan Problems, and the first and second preliminary competitions for the Paris Prize. The use of

perspective in atelier work is one of a series of concluding papers.

Doubtless there is more than a single avenue by which one may profitably pursue the study of architectural design, but unquestionably the student who has elected to walk in the admirable ways of Beaux Arts has been furnished here with a bright lamp for his footsteps.

CHARLES D. MAGINNIS

The Old Devil River

FATHER MISSISSIPPI, by Lyle Saxon. \$5.00. 427 pages. New York: *The Century Company.*

Between the death of Mark Twain and the Great Flood of 1927 the Mississippi region has received little publicity, particularly in a literary way. Edna Ferber pounded out her "Showboat" to have it run its course and become a musical show. That is about the only thing on the list dated after "Life on the Mississippi," "Huckleberry Finn," and "Tom Sawyer." But the appalling flood has once again attracted attention to the river region, its curious and colorful history, its variegated and abundant life, its disappearing charm, and its perennial tragedy. On this score the flood might be looked on as something of a blessing. The river deserves attention, and the close attention of new publicity agents of the caliber of Mark Twain and George Cable: it runs almost the whole gamut of American life and in its muddy water has been reflected a vast portion of the romance, the gaudy realism, the economic life, and the flickering charm that has appeared on this continent since De Soto hacked his way to the river in 1542.

"Father Mississippi," obviously a product of the flood, presents a little of all the many aspects of the Mississippi story. It contains the history of the discovery and settlement of the valley, of the founding of the towns, especially New Orleans, of the development and decline of river commerce. In addition it contains vignettes and episodes of the valley's life. The chapter *A Cat Looks at a King* records the visit of an Indian prince and princess to the court of Louis XV; how the princess was fêted by the courtiers and the prince by the courtisans; how the princess tweaked the noses of the courtiers and married Sergeant Dubois in Notre Dame de Paris; and finally, how, back in America she deserted the handsome Sergeant and had him thoroughly scalped. The way of an Indian maid with a man!

The tale of Molly Glass, the Murderess, is of the greatest importance to connoisseurs of crime stories, to adepts in Freudian psychology and the like, for it gives in considerable detail the sadistic actions of a river hag who gave the art of murder several novel twists. The memoir of Mrs. Martha Martin, containing as it does material about such individuals as Pirate Lafitte and Andy Jackson, is of genuine historical importance.

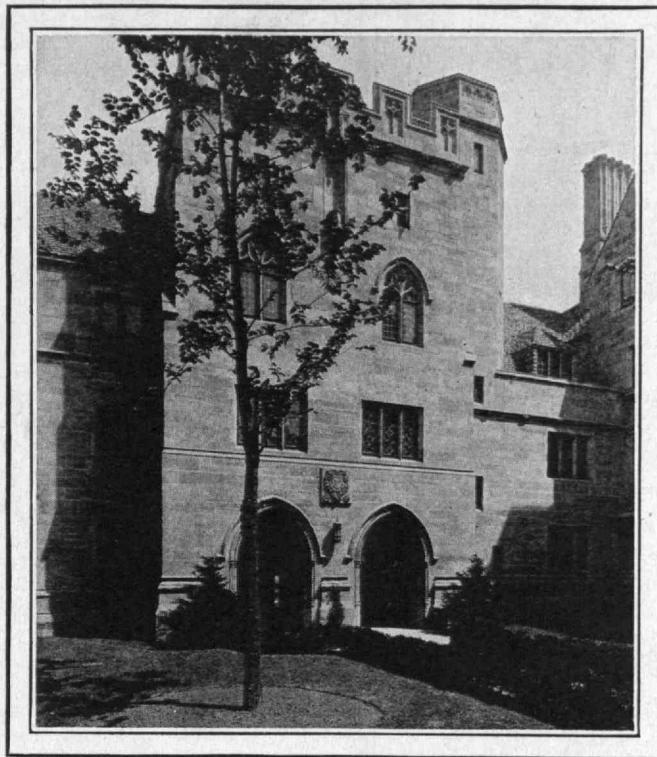
In presenting this material, new as it is, Saxon has not deviated from the general method followed by Mark Twain in "Life on the Mississippi." Where he does differ is in his description of old plantation life, in his emphasis on the tragedy of the floods, and in general, in the greater urbanity and feeling he gets into his writing. It is worthwhile to those interested in literary methods as well as to those interested in the different strata of Southern life, to compare Chapter X, *Plantation Life — And a Wedding*, of "Father Mississippi," with Chapter XXXVIII, *The House Beautiful*, of "Life on the Mississippi." Saxon invests his plantation house with a mellow, romantic charm; Clemens makes his an uncouth, uncomfortable structure full of gimcracks. The two chapters represent the difference between the romanticist and the realist; one chronicler is a charming literateur, the other a superbly acute observer, recounting his observations in terms of a guffaw long drawn out.

Saxon's book is at its best in its latter part — the episodes drawn from the 1927 Flood. The chapters headed *Episode: Down on the Levee*, and *Episode: Acadians in the Flood* are done deftly and convincingly; they picture better than has been pictured before, the unescapable tragedy of the "Old Devil River," the sense of terrible doom conveyed by the cry "Crevasse! Crevasse!"

Some space is given to the engineering aspects of river control and the appendix is largely devoted to the measures recommended by John R. Freeman, '76. (See his article on page 95.)

The book can be recommended as a competent job in every sense of the word. It is admirably illustrated — where can be found better

(Continued on page 132)

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Continued from page 130

flood pictures? It is furthermore notable as a sample of the literary and journalistic renaissance that seems to be underway in the South. The author is former literary editor of the New Orleans *Times-Picayune*, a writer of short stories and magazine articles. Anyone who has read "Life on the Mississippi" should feel duty bound to read this, as an antidote, and, if you please, as a *lagniappe*.

J. R. K. JR.

Reviews in *Tabloid*

HISTORIC RAILROADS, by Rupert Sargent Holland. \$4.00. 343 pages. Philadelphia: *MacRae, Smith Company*.

Last October, to celebrate its centenary, the Baltimore and Ohio Railroad staged the "Fair of the Iron Horse." Originally planned for two weeks, 1,200,000 persons attended during this period, and the show had to be extended for another week. It could have been extended indefinitely.

Twice a day came an historical pageant which told concisely the whole story of the rise of transportation in America from the days of the bark canoe and stagecoach to the latest *train de luxe*. The trains, including engines nearly 100 years old, all paraded by the reviewing stand under their own steam and one of them was "The General," that tragic Civil War engine whose story forms one chapter of Mr. Holland's book. Its capture by Northern soldiers near Big Shanty, Ga., and recapture, with the ensuing execution as spies of some of the Federals, was one of the most dramatic episodes of the conflict between the States.

This book recounts the attempts to introduce steam drive motive power on the early railroads in England, "The Battle of the Gauges," and traces the discouraging struggle to overcome the ageless conservatism of the upper English classes until finally Queen Vic herself in 1842, swept aside the cobwebs and adopted the railway to carry her back and forth to Windsor. The account of American and Canadian trans-continental road-building is condensed but thorough, and conditions in South America, Asia, Africa and Australia are briefly touched upon. Numerous illustrations, five of which are in color, by Manning deV. Lee, grace the text.

A GUIDE TO THE AMERICAN BATTLEFIELDS IN EUROPE. \$0.75. 262 pages. *Washington: Superintendent of Documents, Government Printing Office.*

Bound in limp leather, copiously illustrated with half-tones and maps (six of them being in eight colors), this volume prepared by the American Battle Monuments Commission, is available at a price that ought to make Karl Baedeker turn over in his grave. One can read just what the operations in the Aisne-Marne area were all about, and follow the daily shifting of the lines of combat during July and August of 1918 on a map which also shows the 1927 automobile highways. A documented itinerary tells how to proceed along these highways without going astray or overlooking salient historic points. Having mastered the Aisne-Marne, the reader can then tackle St. Mihiel, Meuse-Argonne, Champagne, and so on.

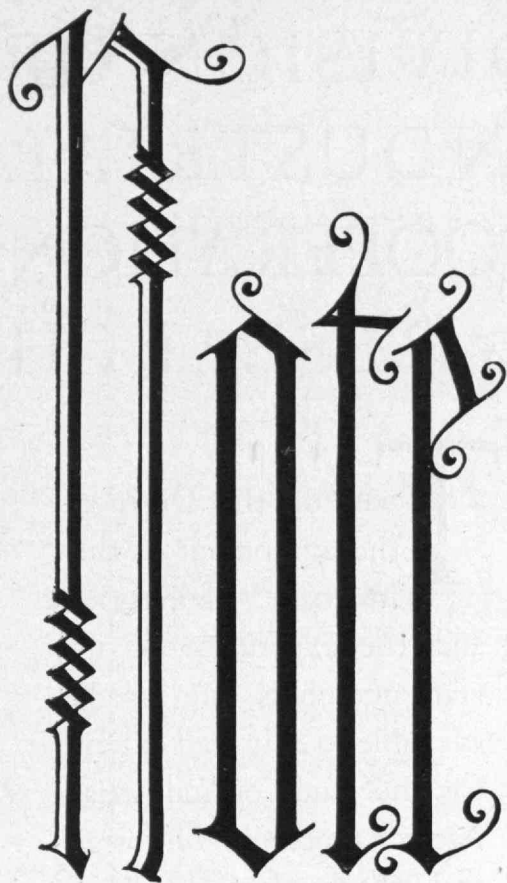
The book is official and ought to settle at least one moot question: "The greatest number of men in the American forces overseas at any one time was 2,057,907, excluding those in the Navy. The greatest number of Marines in the A. E. F. at any one time was 21,571." And a posed picture of a Major General with an unpolished overcoat button infers a total absence of censorship.

THE INDUSTRIAL TRANSITION IN JAPAN, by Maurice Holland, '16. \$1.00. 51 pages. New York: *National Research Council and Japan Society.*

In the text of this book the following statements appear:

1. Transition is the keynote of life in present day Japan.
2. Thirty thousand engineers are enrolled in her engineering societies.
3. In fisheries technology, Japan leads the world.
4. Of the ninety research institutions listed, twenty-three are supported by the national treasury.
5. Reversing the figures for America, where ten pounds of meat are consumed for every pound of fish, the Japanese eat ten pounds of fish for every pound of meat.
6. There are at present six aircraft manufacturing concerns in Japan.
7. The price of United States Steel Common on the New York

(Continued on page 137)



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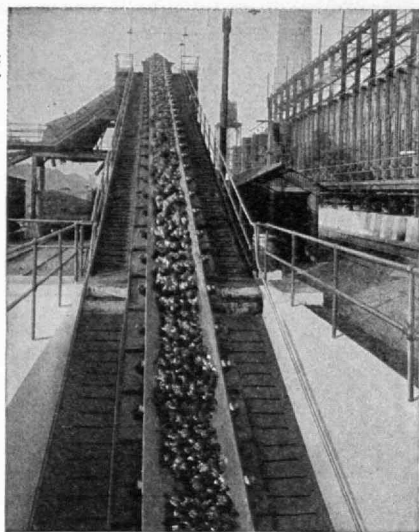
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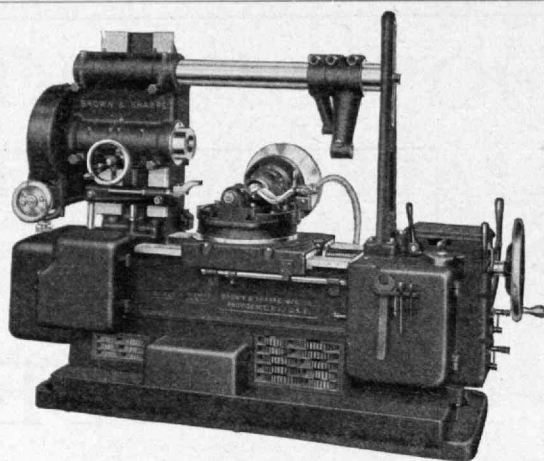
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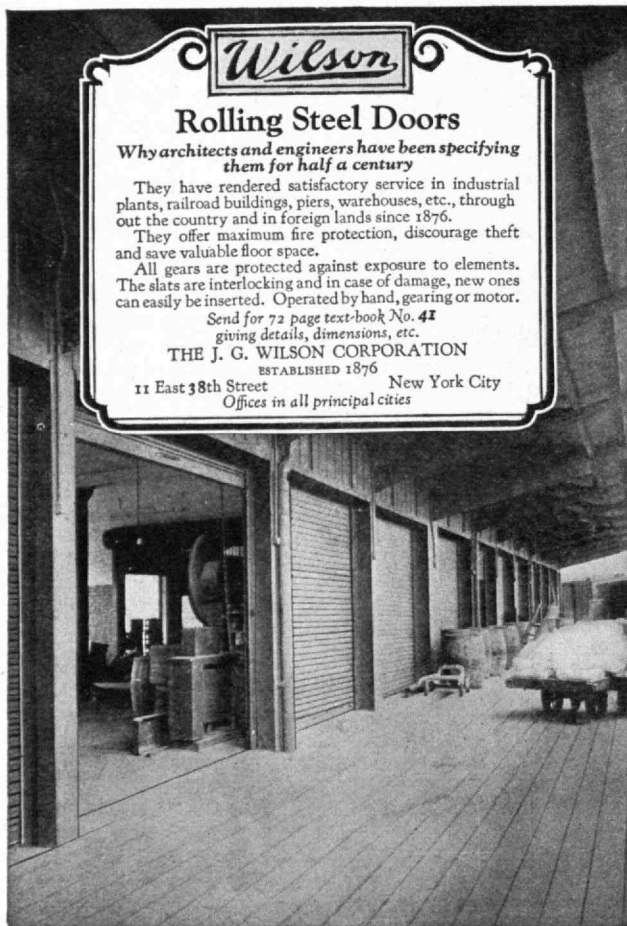


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Continued from page 132

Stock Exchange is infinitely more important to the economic well-being of Japan than the current quotations of the yen.

8. I should place Japan in the fourth position in organization of industrial research among the industrial nations of the world.

The author is Director of the Division of Engineering and Industrial Research, National Research Council, and the book is a condensation of an investigation made while he was attending the Third Pan Pacific Science Congress as a representative of the United States government. The book is slight but of attractive format and contains an industrial map of Japan.

MAKERS OF SCIENCE — ELECTRICITY AND MAGNETISM, by D. M. Turner. \$2.50. xv + 184 pages. New York: *Oxford University Press*.

There has been no dearth of material for the general reader who would acquaint himself with the scientific underpinnings of present day engineering developments in electricity and magnetism. There has been, on the other hand, a much less intense interest in the men who made the experimental and purely philosophical advances in the science, and a weaker interest in the methods they used. It is the emphasis Mr. Turner and the editors of the "Makers of Science Series" have given to men and methods which will distinguish this book from the numberless others written for the popular reader.

In the short space of 184 pages, the author covers electricity and magnetism from the speculations of the ancients; through the work of Gilbert, Cavendish, Ampere, Faraday, Kelvin and Maxwell to the introductory discoveries of gaseous conduction phenomena at the beginning of this century. Here he stops, for, as he says, a treatment of the advances made in the last quarter century "... would require long excursions into the intricacies of modern physics." How completely, how accurately he covers the science is for some other reviewer, versed in his subject, to say.

In literary style and typography it is a textbook, an interesting one, nevertheless. Its numerous line drawings and references to and its quotations from the original literature itself should make it a useful volume for the student and engineer who, perhaps, knows his engineering theory but lacks a knowledge of its historical backgrounds. All of which should make it no less attractive to the general reader.

THE MATHEMATICAL THEORY OF RELATIVITY, by Th. De Donder. \$2.75. 102 pages. Cambridge: *Department of Physics, M. I. T.*

Uniform in size and binding with Max Born's "Problems of Atomic Dynamics," also published in 1926 by the Institute's Department of Physics, this latest book gives a mathematical account of the present status of the theory of relativity in the form in which it has been developed by him since 1915. His presentation is noteworthy on account of its unity, the theory following from a single variational principle which forms the basis of the whole structure. Chapters are devoted to relativistic kinematics, the electromagnetic and mass gravitic field, and to restricted relativity. In the last chapter Professor De Donder gives an outline of a possible connection between relativity and wave mechanics, thus bringing together the two most important developments in physics of the present century.

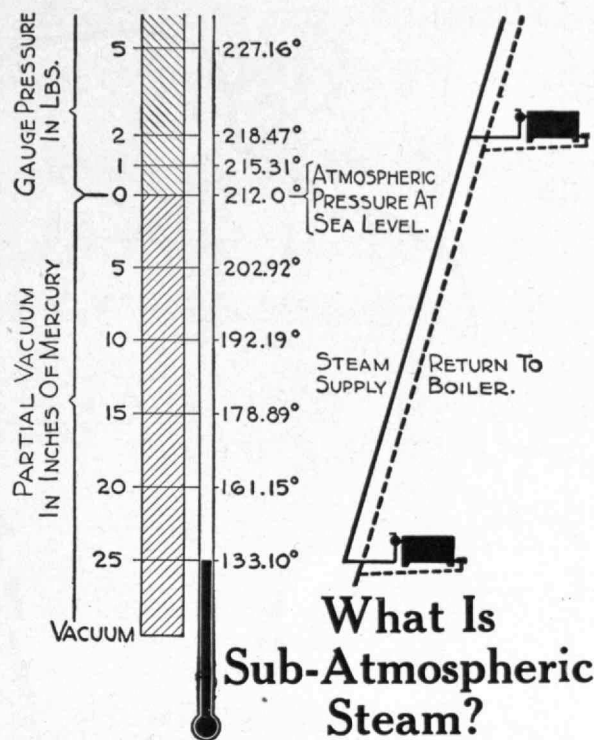
Professor De Donder holds the chair of mathematical physics in the University of Brussels, and was appointed special lecturer in the Department of Physics at Technology during the spring of 1926.

ELECTRIC TRAINS, by R. E. Dickinson. \$6.00. 292 pages. New York: *Longmans, Green and Company*.

THE ESSENTIALS OF TRANSFORMER PRACTICE, by Emerson G. Reed. \$5.00. 401 pages. New York: *D. Van Nostrand*.

Both of these books are texts for the student and reference works for the practicing engineer. The former is a discussion of the fundamental electrical and mechanical principles underlying the design of electric trains and their accessories. It appears to be well illustrated with diagrams and examples, most of which are drawn from English projects. The author seems, however, to have kept his possible American readers in mind.

This second edition of "The Essentials of Transformer Practice" includes something like fifty per cent of new material on the theory, design, and economics of power transformers for use at commercial frequencies. Some attention is given to the characteristics of instrument transformers and the design of air and iron cored reactors.



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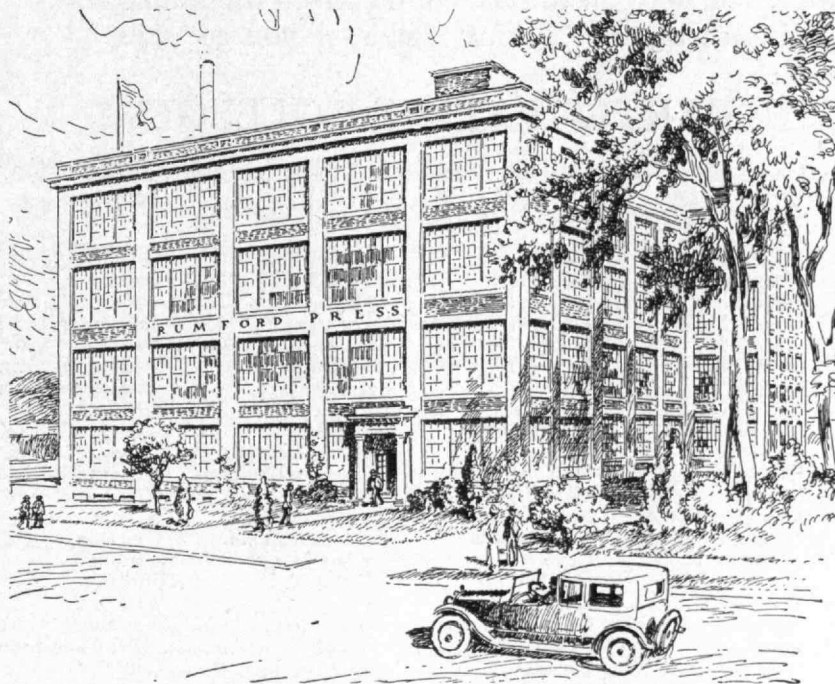
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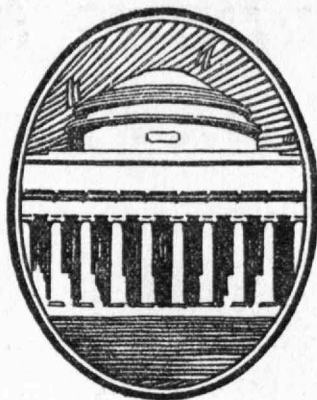


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